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F. W. STANSFIELD, M.D., F.L.S.

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President: *Mr. W. B. Cranfield, F.R.H.S., V.M.H., F.L.S., East Lodge, Enfield Chase, Middlesex.*

Hon. Secretary: *Dr. F. W. Stansfield.*

Hon. Treasurer: *Mr. J. J. Sheldon, F.L.S., "Monkhams," Lower Road, Great Bookham, Surrey.*

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Adiantum venustum, Don.

THE
BRITISH FERN GAZETTE.
NEW SERIES.

VOL. VII. DECEMBER, 1935. No. 1

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EDITORIAL NOTES.

We have received from Dr. F. R. Elliston-Wright, of Braunton, N. Devon, specimens of *Ophioglossum vulgatum*, var. *polyphyllum*, Braun (*O.v. ambiguum*, Coss & Germ.) from Lundy Island. This is intermediate in size between *vulgatum* and *Lusitanicum*, and has a club-shaped spike or fertile frond. The most obvious distinctive character seems to be the production of two or three fronds from one crown instead of only one, thus distinguishing it from both the normal species. The variety has been recorded before from Merioneth, Orkney, Shetland and Scilly.

We have also received from M. Kestner a number of fronds of a most interesting series of hybrid *Lastreas* (*Dryopteris*), including *filix-mas* × *spinulosa* (=*remota*, Braun), *filix-mas* × *dilatata* (*subalpina*, Borbas). Also a frond labelled *spinulosa*

Chanteriæ, which seems to be the old *dilatata Chanteriæ* of Moore, although the outline of the fronds is narrower than *dilatata* and in this respect it approaches *spinulosa*. The scales of the stipes, however, show the dark median line which is so characteristic of *dilatata*. There is nothing quite like Mr. Boyd's hybrid in the series. The latter is thicker in texture, less spinulose and less divided in the pinnules than any of the others. Mr. A. H. G. Alston has drawn our attention to a paper by Mr. Boyd read in 1908 to the Edinburgh Field Naturalists' and Microscopical Society on "*Lastrea remota*." It is, however, largely concerned with Mr. Boyd's find which was at first supposed to be *remota*. It is recorded therein that *Boydii* was found on August 9th, 1894, on the side of Loch Lomond and was in the immediate vicinity of *L. paleacea* (*pseudo-mas*) and *L. dilatata*, no *spinulosa* being seen among them. This is confirmatory of the conclusion, at which we had previously arrived that *Boydii* is a hybrid between *dilatata* and *paleacea*.

We have received from Mr. A. H. G. Alston, F.L.S., of the British Museum of Natural History, a pinna of *Athyrium f.f. convexum*, Newman, which is said by the finder, Mr. N. Douglas Simpson, to be "red all over like a copper beech." As the specimen has turned brown we are unable to distinguish the colour. We have seen many plants of *convexum*, some with red stems and some with green, but never one with a red lamina. We propose to sow the spores and it will be a new break in British ferns if it should turn out to be as described.

A book whose title is "Joys of the Garden, month by month" is to be issued early in 1936 by the publishers of the *Irish Church Gazette*. The author is our Vice-President, the Rev. Canon Kingsmill Moore, D.D., F.L.S. We hope to be able to review it in our next number.

Our member, the Rev. E. A. Elliot, of Cubley Rectory, near Derby, is anxious to obtain Vols. III and IV of THE

GAZETTE and will be glad to hear from anyone who may have copies of them to spare.

The Rev. E. A. Elliot, Rector of Cubley, writes that he proposes, in the early Spring, to divide a clump of a fine crested *Athyrium* raised at Sale, and will be pleased to send a piece to any member who may ask for it.

At the moment of going to press we are pleased to learn that the long and devoted services of our president to Horticulture are to be recognized by the bestowal upon him, by the R.H.S., of the Victoria Medal of Honour.

OUR FRONTISPIECE.

Adiantum venustum, Don.

This beautiful fern was referred to on p. 48, Vol. V of THE GAZETTE in 1924. It is, of course, not a British fern, but an introduction from Kashmir, but is much hardier than *A. capillus-Veneris* and almost, if not quite, as hardy as the Canadian *A. pedatum* although, unlike that handsome species, it is evergreen. The photograph is that of a plant grown by Mr. Henwood in a perfectly unheated greenhouse where it is hard frozen every winter with impunity. Mr. Macself has had a plant quite in the open for several years where it also has remained unharmed. It ought to be a good market fern when it can be propagated in sufficient quantity. It spreads rapidly from the root, but probably sporelings will make more effective plants.

THE ANNUAL MEETING, 1935.

The Fortieth Annual Meeting of the Society was held on June 24th, 1935, at the Royal Seven Stars Hotel, Totnes, Devon. The President being detained in London by urgent business the Chair was taken by Mr. T. E. Henwood, the senior Vice-President.

The Chairman expressed his pleasure at being able to attend the meeting and welcomed the members to a pleasant neighbourhood and, he hoped, a fertile fern-hunting country.

The Minutes of the last Annual Meeting were read, confirmed and signed by the Chairman.

The members present were :—

Mr. T. B. Blow, F.L.S. (Vice-President), Welwyn, Herts ;
Mr. T. E. Henwood (Vice-President), Reading ;
Mr. Robert Bolton, Birdbrook, Essex ;
Mr. P. Greenfield, Warlingham ;
Mr. J. J. Sheldon, Great Bookham ;
Mr. James A. Sinclair, London ;
Mr. F. W. Thorrington, Little Baddow, Essex ; and
Dr. F. W. Stansfield (Hon. Secretary), Reading.

The Hon. Secretary read his report as follows :—

" Mr. President, Ladies and Gentlemen,

Our Society has had another rather trying year, as the exceedingly dry summer of 1934 was unfavourable to outdoor ferns except in a few specially favoured localities. Some of us have had difficulty in preserving the lives of a few of our treasures, but, so far as I have learned, no variety of importance has become extinct. The severe frost and succeeding dry winds in May this year did damage to some unprotected ferns, but apparently not more than was done to other vegetation, including such hardy subjects as the oak and beech trees and the common ivy. We have lost one distinguished member by death, Miss E. A. Willmott, F.L.S., V.M.H., whose obituary notice was published in The Gazette of December last. Several members have resigned and others have lapsed through non-payment of subscriptions, but it is noticeable that no one who has taken an active interest in the work of the Society has been so lost. We have gained several new members during the year, viz., Mr. C. W. Grubb (elected at the last Annual Meeting), Mr. Arthur Pyke, of Windlesham, Surrey, Dr. F. de Tavel, of Berne, the eminent Swiss pteridologist, Dr. John Macwatt,

of Duns, Berwickshire, Captain Ambrose Dunston, of Donhead St. Mary, Wilts, and Captain H. G. Hawker, of Strode Ermington, S. Devon, whose names will be submitted to you to-day for formal election. Taking these into account we are left with 101 Subscribing Members and 8 Honorary Members. Dr. de Tavel has already shown his interest by his contributions to THE GAZETTE, now in the press, and Captain Dunston is anxious to establish, on his estate in Wiltshire, a representative collection of British ferns which will be available for study to all those really interested in them. The botanical department of the University of Geneva to which we decided, a year ago, to send THE GAZETTE has applied, through Professor Hochreutiner, for all the back numbers of our publication and has been supplied with all those available. Our esteemed member, M. Paul Kestner, of Lausanne, continues to make valuable additions to our knowledge through THE GAZETTE, as well as contributions to our collections of ferns from time to time. M. Kestner has this year been elected *Maire* of the little town in Alsace, where he has an old family residence, although he is usually resident there only for about one month in the year. The most important wild find among European ferns during the year is, perhaps, M. Kestner's hybrid between *Asplenium Foresiense* and *A. trichomanes*. This cannot, of course, be counted as British although it is half British by descent like *Polypodium Schneiderii* and some others. I am glad to have been able with the help of other members to supply M. Kestner with *P. Schneiderii*, which he was very anxious to acquire. Dr. Rowlands's possibly plumose find of *Adiantum capillus-Veneris* in Glamorganshire is interesting, but has not yet had time to prove its quality. An *acuto-divisilobe angulare* of my own found in Cornwall in 1933 has, this year, shown character much superior to what was anticipated when it was found. I should like to have shown you a frond of this, but I could not do so without injuring the plant, already severely damaged by the May frost."

F. W. STANSFIELD.

The Hon. Treasurer, Mr. J. J. Sheldon, read his report as follows :—

BALANCE SHEET.

Receipts.	£	s.	d.	Payments.	£	s.	d.
Balance from last year	60	2	8	Donation to Southport Show	10	10	0
Subscriptions received	33	16	6	Expenses at Annual Meeting, 1934 ...	5	0	0
Sale of Gazettes ...	2	8	0	Affiliation Fee, R.H.S.	2	2	0
Advertisement ...	2	2	0	Receipt Book ...	2	3	3
				Cheque Book ...		2	0
				Printing Sundries ...	1	3	6
				Gazette, Dec., 1934	19	14	0
				Balance	57	14	5
	£98	9	2		£98	9	2

Audited and found correct, June 24th, 1935.

(Signed) P. Greenfield,
Hon. Auditor.

It was resolved unanimously that the Secretary's and Treasurer's reports be received and adopted.

ELECTION OF OFFICERS AND COMMITTEE.

Mr. W. B. Cranfield, F.R.H.S., F.L.S., was unanimously re-elected President, on the proposition of Mr. R. Bolton, seconded by Mr. Blow.

The old Vice-Presidents, viz., Mr. T. B. Blow, F.L.S., Mr. Alexander Cowan, Rev. Canon Hawkins, M.A., Mr. F. J. Hanbury, F.L.S., Mr. T. E. Henwood, Rev. Canon Kingsmill Moore, D.D., F.L.S., Professor F. E. Weiss, D.Sc., LL.D., F.R.S., F.L.S., were also re-elected, on the proposition of Mr. R. Bolton, seconded by Mr. Thorrington.

The Hon. Treasurer, Mr. J. J. Sheldon, F.L.S., and the Hon. Secretary and Hon. Editor, Dr. F. W. Stansfield, were also unanimously re-elected as was Mr. P. Greenfield, Hon. Auditor.

The old Committee, viz., Mr. Robert Bolton, F.R.H.S., Rev. E. A. Elliot, M.A., Mr. A. J. Macself, Dr. S. P. Rowlands, Mr. J. A. Sinclair, Dr. T. Stansfield, Mr. G. E. Stephens,

Mr. F. W. Thorrington and Mr. R. Whiteside, were re-elected, on the proposition of Mr. Sheldon, seconded by Dr. F. W. Stansfield.

A letter from Mr. A. J. Macself to Mr. Sheldon was read criticizing the decision of the Society at the last Annual Meeting that the special prize of a piece of plate, value ten guineas, for the best group of ferns arranged for effect at the Southport Show, 1934, should be for one year only. Mr. Macself thought it ought to be continued indefinitely and argued that the money could not be better spent.

On the motion of Mr. Bolton, seconded by Mr. Sheldon, the Hon. Secretary was requested to answer the letter.

No fronds were exhibited at the meeting, the severe frost in May having apparently prevented the development of specimen fronds in time for the meeting.

Dr. Stansfield exhibited a photograph of *P. angulare elegantissimum*, a *pulcherrimum* seedling of his own. Also original photographs of M. Kestner's hybrid, *Asplenium Foresiense* × *A. trichomanes*, and of *A. viride plumosum*, Greenfield.

It was unanimously resolved that the place and time of the Annual Meeting should be left to the decision of the Committee.

A Special General Meeting of the Society, arranged by the Committee for August 29th, 1935, to be held in the Council Chamber of the Town Hall, Southport, was duly sanctioned by general agreement.

The party remained at Totnes for about a week, during which the surrounding country was industriously scoured for ferns and, although the neighbourhood was perhaps not so rich as the Sidmouth district visited last year, plenty of good hunting was met with. The lime-loving species, however, were not abundant, neither *P. angulare* nor *P. aculeatum* being found in quantity, and *Scolopendrium* was equally

sparse in its distribution. *Asplenium trichomanes* and *A. Adiantum-nigrum* were found fairly plentifully on walls, and *Ceterach* was in great abundance about Little Hempston and Staverton. A visit was paid to Berry Head and a number of interesting flowering plants were seen, as well as the usual limestone rock ferns, but no varieties were noted among these. A minor *cristatum* variety of *Asplenium trichomanes* was found at Rathery and also a single small plant of the old variety *Mouleii* in the same neighbourhood. A *Blechnum*, showing a tendency to the *serratum* character but inferior to the older finds of Airey and C. Henwood, was picked up south of Totnes. Perhaps the best thing found was a bipinnate form of *Polypodium vulgare* at Staverton. As, however, the old fronds were withered and the new ones not yet grown, this plant will need to be cultivated before its final character can be seen. It is, however, quite distinct from the usual *semilacerum* types and it may turn out to be something like *omnilacerum superbum* previously found in Cornwall and in the S.W. of Ireland.

GENERAL MEETING HELD AT SOUTHPORT.

A Special General Meeting of the Society was held in the Committee Room at the Town Hall, Southport, on August 29th, 1935, by kind permission of the Mayor and Corporation. There were present :—

Mr. Robert Bolton, F.R.H.S. ;
Mr. Joseph Lloyd, Southport ;
Mr. John Lovelady, Haslingden ;
Mr. A. J. Macself, Reading ;
Dr. F. W. Stansfield (Hon. Secretary), Reading ;
Mr. R. Whiteside, Lancaster ;
Mr. W. Wilson, Kendal.

In the absence of the President and Vice-Presidents, Mr. Whiteside was elected to the Chair.

The Minutes of the Annual Meeting at Totnes on June 24th were read and agreed to, Mr. Bolton and Dr. Stansfield being the only members present at both meetings.

Mr. J. W. Dyce, Kinermorey, 31, Mayfair Gardens, Woodford Green, Essex, was proposed as a member by Dr. Stansfield, seconded by Mr. Bolton, and duly elected.

Arising out of the Minutes of the Annual Meeting, the suggestion of Mr. Macself that the Society should contribute a special trophy for ferns at the Southport Show was discussed at some length and it was eventually resolved, on the proposition of Mr. Bolton, seconded by Mr. Lovelady, that Mr. Macself should be empowered to appeal to the members for subscriptions towards a silver cup to be a perpetual trophy to be handed each year to the winner of the first prize for the group of ferns arranged for effect, the cup not to be won outright, but the winner to be given a small silver replica upon giving up the trophy.

It was also resolved, upon the proposition of Dr. Stansfield, seconded by Mr. Macself : "That, in the opinion of this meeting the next Annual Meeting ought to be held in the North."

There was considerable discussion as to whether the Southport Corporation should be asked to reduce the size of the area allotted to the special group of ferns arranged for effect, but it was eventually agreed that the matter should be left in *statu quo* and that no representations should be made to the Show Committee.

A number of fern fronds were sent by Canon Kingsmill Moore for exhibition, including *P. angulare divisilobum venustum*, K. Moore, two seedlings from the same, both very finely developed, *P. aculeatum pulcherrimum*, K. Moore, *P. ang. divisilobum plumosum incisum*, H.S., *P. a. divisilobum plumosum dissectum*, and a seedling *Scolopendrium v. crispum*, said to be from *crispum speciosum* but judged, from internal evidence, by those present, to be from *S. v. crispum fimbriatum*.

A vote of thanks to the Southport Corporation for the use of the room was proposed by Mr. Bolton, seconded by Mr. Lloyd and carried unanimously.

A vote of thanks to the Chairman for presiding closed the proceedings.

BRITISH FERNS AT THE SOUTHPORT SHOW, AUGUST, 1935.

The ferns at Southport this year were again quite a striking feature of the Show, although perhaps not quite up to the standard of some former years. This was, no doubt, due to the exceedingly trying weather of the last two years so far as hardy ferns are concerned, as well as to the absence of one or two exhibitors who had been prominent competitors in previous years.

The large " group arranged for effect " was, as usual, the most important class for hardy ferns, and a piece of silver plate, value ten guineas, was offered to the winner of the first prize in addition to the substantial money prizes offered by the Southport Corporation. There were, this year, only three competitors, whose groups were all arranged upon the same lines, viz., a central cavity with ferns grouped inside and around it. The groups were all good and highly decorative and ran each other very closely in merit. The one consisting of the cleanest and freshest ferns was that of Mr. C. W. Grubb, a comparatively new competitor, who won the first prize, though he was closely followed by Mr. Joseph Lloyd and Mr. John Lovelady. All three are to be congratulated upon their efforts in growing and arranging their beautiful ferns.

In the class for twelve hardy British ferns, Mr. Grubb was again first, Mr. Lloyd being second, and Mr. William Law (Southport) third.

For six hardy British ferns, Mr. Grubb was first and Mr. Lovelady second.

In the class for six normal species somewhat greater efforts were made than last year to show the capabilities of our native species, but we still think more could be made of this class than has yet been done. Mr. Lloyd was first, having in his half-dozen a finely grown and healthy plant of the British *Adiantum*. Mr. Lovelady was second and Mr. Askew third.

For three *Scolopendriums*, Messrs. Grubb, Askew and Lovelady were first, second and third respectively.

For three *Polypodiums*, Messrs. Lovelady, Askew and Law arrived in this order. Mr. Lovelady had three beautiful plants illustrating three different sections of varieties. Mr. Askew's plants were quite as well grown and really very fine, but did not show so much of the varied characters of the species.

For three *Polystichums*, Mr. Lovelady was first, his lot including a very beautiful plant of *P. aculeatum pulcherrimum*. Mr. Lloyd was second and Mr. Grubb third.

For three *Athyriums*, Mr. Grubb was first, followed by Mr. Lovelady and Mr. Robert Hayes.

For six British ferns in not fewer than three distinct varieties, Mr. Luckin, of East Grinstead, took first place, with Mr. H. S. Baucher, of Bootle, second, and Mr. Lloyd third. Mr. Lovelady showed a plant of *P. angulare prothalliferum superbum*, H.S., which was very highly commended

For three British ferns, dissimilar, Mr. Grubb was first, Mr. Monkhouse second, and Mr. Luckin third.

For one British fern, Mr. John Brookfield, of Birkdale (Southport) was first, followed by Mr. Grubb and Mr. C. W. Holt, of Timperly, Cheshire.

OBITUARY.

BURY.

We deeply regret to announce the death, on October 30th, of Mr. Lindsay Bury, of Stanford Wood, Bradfield, Berks, who has been a member of the Society since 1927. Though not a fern specialist he took a great interest in ferns as a general botanist and grew a fair collection of species and a few varieties in his interesting garden at Stanford Wood. Mr. T. B. Blow, who knew him well as an old friend, has supplied us with most of the following particulars about his career. In his youth and early manhood he was a distinguished athlete, both at Eton and Cambridge. At the university he was a treble Blue and played in the cricket eleven in 1877 and in the football team in 1877 and 1878. He was a J.P. for Wiltshire, where he lived for many years and, since his coming to Bradfield, he took an active part in local government on the Board of Guardians and Rural District Council; he was also vice-chairman of the local Conservative Association. Mr. Blow says of him: "It was during the time I worked with my old friend that I got to know him so intimately and to realize his wonderful qualities as a fellow worker at the Hospital of the Alliance at Yvetot. He came out soon after the commencement of the war and brought his own open touring car for use in transporting the doctors to the various hospitals and for the transport of the wounded who were not too much damaged to be carried in an open car. Also for fetching doctors, nurses and supplies almost every day from the ports of Dieppe and Havre. His great hobby in life was carpentry and carving, in both of which he was a true craftsman, and all his spare time was taken up in keeping everything in the hospital in good repair. During the war he did voluntary work with the French Red Cross for two years and was awarded the medal of the Renaissance Francaise in appreciation of his services. Later he was a special constable in London until the war ended. His passing without a long and painful illness must be a great

consolation to all his friends. His work and duties all accomplished he *will* rest in peace." He lost his only son at the very end of the war and leaves a wife and daughter, to whom we tender our sincerest sympathy.

THURSTON.

We also regret to announce the death at Penzance of Mr. Edgar Thurston, C.I.E., aged 80 years, as recorded in the *Gardener's Chronicle* for October 19th. Mr. Thurston died suddenly while making botanical notes at his desk. He was not a member of the Society, but was a keen botanist whose interest in ferns impelled him to correspond with the Editor on fern matters. He published a number of books dealing with the Cornish flora and we have occasionally published notes from him on fern subjects.

WILLIAMS.

We deeply regret to announce the death on November 6th of Mr. P. D. Williams, V.M.H., of St. Keverne, Cornwall. Although he was perhaps only mildly interested in ferns he was a member of the Society for two or three years, but resigned in 1930—possibly on account of failing health, but his main interest was elsewhere. He was a great gardener and had a fine collection of choice trees and shrubs in his wonderful garden at Llanarth. He was a master hand both as a cultivator and a raiser of daffodils and many fine varieties owe their origin to his energy and sagacity. His was a most engaging personality and he will be greatly missed by a wide circle of friends.

THE ANNUAL MEETING IN 1936.

At the Totnes meeting in June last it was resolved that the place and time of meeting for 1936 should be left to the decision of the Committee. The Special Meeting at Southport did not, of course, alter this arrangement, but registered an opinion that the next meeting ought to be held in the North.

The question is still open and any suggestion that may be sent to the Secretary, or to members of the Committee, will be welcomed and duly considered. It is requested that these should be sent in as early as possible—say not later than January, 1936. The Committee will then decide and the final arrangements will be announced by circular to all members. The following tentative suggestions are made by the Hon. Secretary :—

Teesdale, for Cronkley Fells, etc.

Harlech, for Cader Idris.

Barmouth.

Southport for meeting ; afterwards Wales or Scotland for excursions.

Cheddar or Glastonbury, if in the South this year, or some other.

F.W.S.

ON SOWING SPORES.

Some years ago our Editor gave us an article on sowing spores, in which he recommended the use of butter-dishes ; the writer has found these most valuable and has only once or twice had any sort of failure with them in raising crops of prothallia, but has to admit considerable failure at a later stage, and it is this which prompts this note, although even then it does not seem to be the dishes which cause the trouble but mismanagement in some way.

However thinly sown, there comes a time when the crop has to be pricked out singly or at least in very small clumps, and if there are any spare dishes these will naturally be used, and will be filled with the same kind of soil, sterilized in the same way, that was put in the dishes in which the actual sowing was made.

In a day or so mould appears ; there has been no sign of it up till now, but this is the moment it generally chooses, and

losses are all too frequent amongst the separated seedlings, although those left in the original dishes will very likely continue to grow and flourish unharmed.

Is this trouble caused by the time of year when, in many cases, the pricking out is done, that is, during the summer when warmth, one supposes, conduces to fungous growth? If so, should the seedlings be left rather longer undisturbed, or should any additional sterilization precautions be taken?

In order to check a recent slight attack of the enemy, the lid of one dish was tilted to admit a little dry air, and left in that position for a day. The result was so satisfactory (care being taken to keep the soil just moist) that the dish has not been since then closed again. The little fronds have been somewhat checked in growth, to judge by a comparison with the advance made by those in the original dish, but otherwise seem to have suffered no harm, to say the least.

A fresh note on the whole subject by the Editor would no doubt be much valued and most helpful.

E. A. ELLIOT.

(It is better, we think, *not* to sterilize the soil in which seedlings are pricked out after the first fronds are formed. The process of sterilizing by boiling water seems to invite the growth of moulds, possibly by destroying other organisms which are antagonistic to fungi, the spores of which it is practically impossible to exclude. If freshly prepared and clean compost be used, with a surfacing of fine sand, the little plants quickly become established and air should be admitted as soon as it is seen that they are beginning to grow. Also ordinary clean pots or pans, which can be watered from below, are better than the initial butter dishes as the surface is kept drier and moulds are unable to gain a footing. On first sowing fern spores in sterilized soil one usually gets an initial crop of moulds, but these generally disappear before the fern spores have germinated and give little trouble afterwards unless the sowing has been made too thickly. Even in that case the moulds can be eliminated by watering with a weak (pink) solution of potassium permanganate. It is a great saving of trouble if the little seedlings are pricked out as single individuals and not as clumps. This is easily accomplished if they are pricked out singly as soon as the first frond is formed and before the new roots have become entangled.—*Ed.*)

MORE THOUGHTS ABOUT HARDY FERNS.

After reading Mr. Macself's article entitled "Just Thoughts concerning Hardy Ferns," one could not help mentally commenting, "Yes, very just!" While some might think the article somewhat pessimistic in tone, no one can deny that it was opportune. For the future of our Fern Society in particular, and of fern growing in general, must have caused many anxious moments to the elders of the cult. Perhaps Mr. Macself will not mind if a few remarks are added to his, and I suggest that it would be helpful if other members would follow the lead and give their own views and suggestions.

While the whole article is interesting, the part which first engaged one's attention was that dealing with a possible lessening of interest in the cultivation of British ferns. It is, of course, desirable that as many as possible should be drawn into the fold of the Pteridological Society, but it is perhaps of more immediate importance that an interest in ferns should be inculcated into that large section of the public which is already "garden-minded." Mr. Macself makes the very interesting suggestion that nurserymen are hampered rather than otherwise by the generosity of fern enthusiasts in distributing their offsets and seedlings among their friends. I personally have a guilty conscience when I compare the number of ferns which have been given to me by generous friends (I need only mention our Editor as an example), with the number I have purchased from nurserymen. But further thought shows that matters are not really as bad as at first seemed to be the case. In the first place, many of the ferns given away by friends are rarities not to be obtained through any trade channels. Secondly, the fern-lover gives away his surplus stock hoping, with his dainty tit-bits, to create an appetite among the recipients for more, in which case further specimens would naturally be obtained from some nurseryman who is wise enough to stock such things. Mr. Macself, better than most, is in a position to appreciate the

outlook and the difficulties of those who sell plants, but I would suggest that too often a nurseryman waits until there is a demand for certain plants, instead of " dressing his shop window " so as to attract custom. It is probable that many nurserymen are not familiar with the varieties of British ferns, and do not appreciate their possibilities for garden decoration. It may be, too, that the more progressive among them would be glad of some advice from an official Society as to the selection of suitable varieties for offering to the public. Among the large number of fern varieties which are grown by specialists, only a small proportion are suitable, by reason of their striking or beautiful appearance, their reasonable demands under cultivation, and their ease of propagation, to qualify for inclusion in a general plant catalogue. As in the case of other plants, there is no " hundred best ferns," but a short list, which would naturally include classics such as *cristata*, *polydactyla*, Dadds and Wills, among the male ferns, and *Victoriae* among the lady ferns, could easily be made out. Ferns are saleable articles, and as Mr. Macself rightly remarks, folk must not " shudder at the mere thought of associating commercialism with their hobby." The important point is that knowledge must be disseminated and interest aroused. The " power of the Press " is proverbial, and one cannot help asking whether our horticultural journals are doing as much as they might in presenting the claims of the British ferns to their readers. Full credit must be given to Mr. Macself for his well-known efforts in this direction, but I believe other editors might do more. The late Mr. C. T. Druery was assiduous in writing about his hobby in one or two gardening papers, but no one has taken his place. Perhaps the members of the Pteridological Society are too silent, though, of course, no one can gauge the value of their personal influence among their own particular circle of friends. The fern exhibits at the Southport Show represent a step in the right direction, and the exhibits at the London shows of such nurserymen as Messrs. Perry and Reuthe are undoubtedly valuable. In the end, the

future of the cult of British ferns depends on sustaining and increasing public interest, and this introduces that hateful word—propaganda. Let the fern enthusiasts and the nurserymen, each in their several ways, do what they can to encourage the growing of these fascinating plants. The matter may perhaps be summed up by saying that the fern-lover must help create an interest in ferns while the nurseryman does all he can to create a demand for them.

S. P. ROWLANDS.

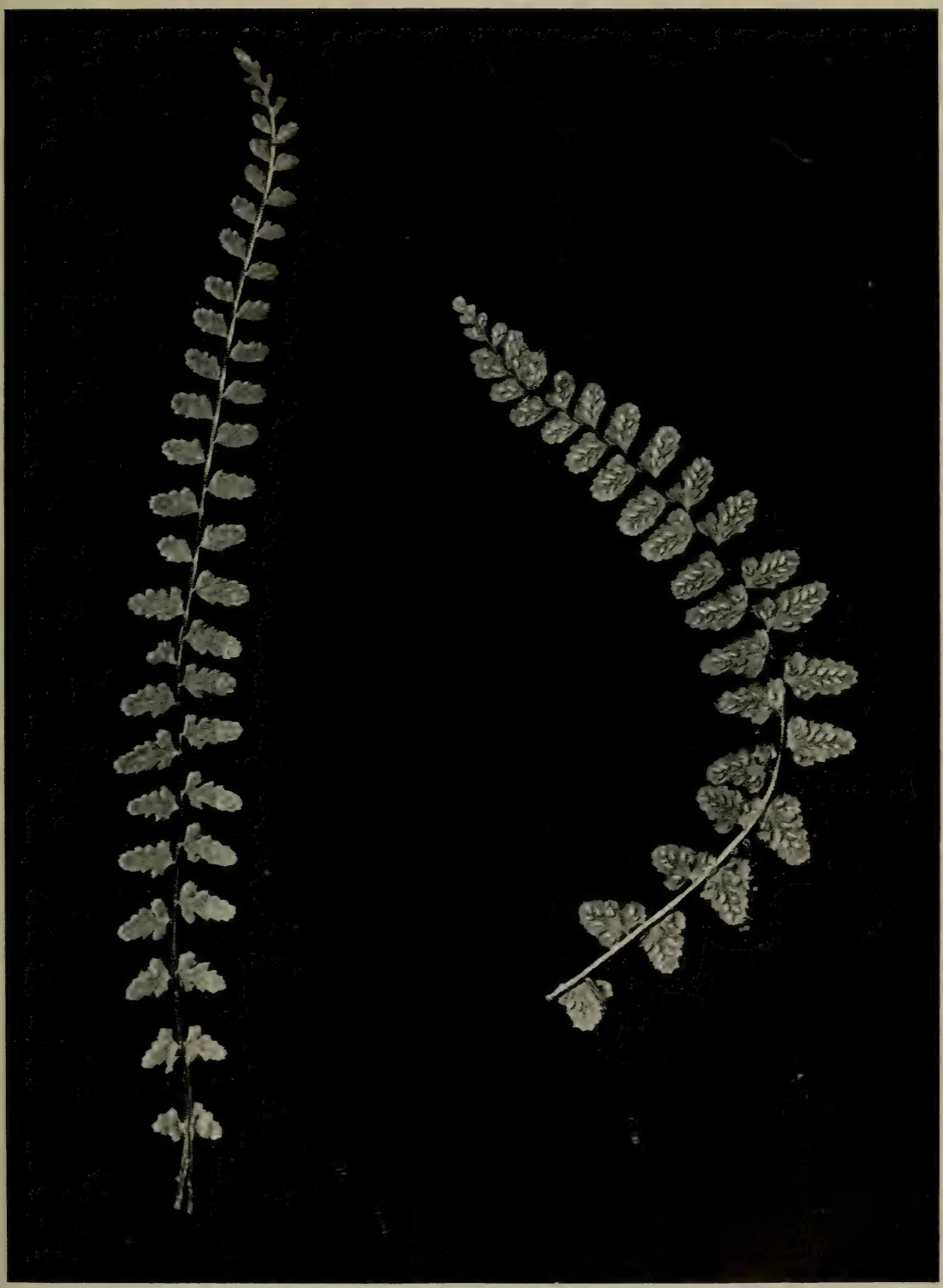
STILL MORE THOUGHTS ABOUT HARDY FERNS.

We have perhaps done some thinking since June about the present-day state of fern growing, after reading the forcible but timely article by Mr. Macself.

Casual visits to nursery gardens suggest—sometimes at least—that correct naming for ferns is considered unnecessary ; and the keen but perhaps unlearned buyer of an incorrectly named fern is liable to be discouraged when the expert comes along into the garden and says, " Whoever let you have that under that name ? It's no such thing." The result, with the tolerant, is a mental decision " not to go to that nursery for ferns again " ; with the intolerant, affairs go further ; but with the same result. It really is true that most gardeners are anxious to get true plants, rightly named ; the rose or delphinium or gladiolus enthusiast knows scores of *varieties* by name and by sight, and does not like to find errors in *species*.

But that does not explain the too prevalent apathy : sometimes one is led to think that a fernery is actually the cause of that, the visitor cannot see the trees for the wood.

A little boy was taking a caller round the garden and came to a corner where a collection of Stonecrops was massed together ; he remarked, " These are Stonecrops, but perhaps you are not interested in them." No, the caller wasn't. It was quite a fair collection, but it didn't attract : if it had been scattered over a rock garden, much more notice would



B. *L.*

Asplenium Foresiense × *Trichomanes.*

have been compelled ; and it is just like that with many ferneries, including the writer's tiny corner, and most nursery gardens, and Kew Gardens itself : ferns do not grow in conglomerate jumbles and ought not to be presented to view as if they did. Other plants after all do grow in situations that suit ferns ; and just as a nurseryman makes rock gardens to show off his Alpines, so, it is suggested, he might make shade gardens in which ferns are interspersed with woodland plants and where the beauty and mutual harmony of both types are revealed : and this, too, would go some considerable way towards counteracting what, to some people, is a drawback in ferns, the sameness, within limits, of their colour.

Colour is to-day one of the chief points that gardeners look for : one has only to think of the Zinnia or Antirrhinum of, say, thirty years ago to realize this ; and another thing is diversity. Hybridization is all the rage now, but as yet not many amateurs make their own hybrids : they are content to buy them, and though nurseries respond to the demand in the case of flowering plants, there is less inclination to do so with ferns, and those which are to be found there are varieties of old standing for which somewhat naturally there is not a great demand since these forms are already widely distributed—and ferns live a long time.

E. A. ELLIOT.

MORE ON THE BRISSAGO HYBRID AND ON HYBRID FERNS IN GENERAL.

Lausanne,

November 4th, 1935.

The plant which has originated in my greenhouse is growing most vigorously and is now a fine fern though only a year old (at least as sporophyte). It has 19 fronds and had four more which were damaged when I had to repot it in the beginning of September.

I send our Editor one of these fronds which will show him the identity with the plant found wild in Brissago a year ago,

then probably two years old, and which is also doing well I also send our Editor a frond of the Brissago hybrid. Some, which are still unrolling, will probably be larger still.

For the sake of brevity, I shall hereafter call the Brissago hybrid B. and the one which originated in Lausanne L.

The stipe in the L. hybrid is short, but the B. hybrid, although bearing long stipes when found, has grown fronds with short stipes ever since.

This hybrid grows much more vigorously than either parent, and will no doubt have very large fronds next year and beat any *Aspl. trichomanes* in that respect. M. de Tavel has specimens in his herbarium, from Brissago, with fronds as large as those of the N. American *A. Platyneuron* (*A. ebeneum*).

If I succeed in reproducing this fern from spores, it will be a splendid addition for the wall garden.

I have a good crop of prothallia from the spores given off by one of the fronds of the B. plant (about 50). Unfortunately, they will only put on frondlets next spring, as the greenhouse is not heated, so there is the usual risk of losses through fungi or moss invasion during winter.

What I am looking forward to with much anxiety is obtaining spores from the L. hybrids, of which I am sure it is a first generation hybrid. I have not the same absolute certainty with the B. plant, though there is every probability it is one. Unfortunately, the L. plant so far has produced no spores. It has produced sori profusely, even in its infancy, on very small fronds.

These have always had an abundance of sporangia, all empty however (the same with the B. plant, with the exception of the 1934 spring fronds gathered at Brissago, of which I sent one to our Editor last year and which he had reproduced in The Gazette of June).

Now there is an interesting question to be investigated : that is, how does the law of Mendel work in the case of fern

hybrids ? This can only be tested with offspring from first generation hybrids.

There are but very few hybrids which can be certified as first generation hybrids. (I mean plants alive, in collections or wild.)

Of course, I mean by hybrids a cross between ferns belonging to different species and which, in principle, are sterile. Crossing mutants, or " sports," of a species is, of course, largely practised and is as easy as sowing the pure original. The resulting plants, as far as I know, follow on the whole the law of Mendel.

Aspl. Germanicum can be safely admitted to be always a first generation hybrid, at least as I find it in the Valais in abundance and in the Tessin, always between the parents.

The late Dr. Christ states it reproduces itself in certain localities, which implies it is sometimes fertile, but, unfortunately, he does not say where. He describes the spores.

I have hunted in vain for colonies of this hybrid, but have never found any, nor had I until this year been able to find a plant with normal spores although I have examined hundreds.

This year, however, Dr. de Tavel has sent me a plant of *A. Germanicum* from the Valais, which had a few normal sporangia and very few normal spores. From these I have now a few prothallia, unless they are prothallia from stray spores, which everybody knows it is difficult to keep out of cultures.

I have a specimen of *Aspl. Murbeckii* (*septentr.* × *Ruta*) from the lake of Zurich, which I owe to Mr. Oberholzer, a portion of a large plant growing between the parents. I have a few prothallia which I hope are from this plant. This hybrid is said to be fertile in a station at Nemours, near Paris, and to reproduce itself there.

I owe to the kindness of our Editor two plants of *Polypodium Schneideri* (*Polyp. aureum* × *P. vulgare cornubiense*). They are young portions of a rhizoma. I do not know whether they will become fertile in time. This is, in all certainty, a first generation hybrid.

I have other hybrids of which there is no certainty of their being of first generation and others of which the hybrid origin is not absolutely proved.

Of *Dryopt. F.M.* × *Spinulosa sensu lato*, we have two forms which are fertile and are found in colonies of hundreds (the two forms which are mentioned in my letter to our Editor). Their fertility in itself is a sufficient proof to me that they are not first generation hybrids.

This Brissago hybrid, therefore, originated in culture before I had a wild-found one in my house, is so far the only one on which the law of Mendel can be experimented. I am sure in time to be able to obtain some sound spores from it.

I am busy at present trying to obtain a "home-made" specimen of every hybrid known in Europe, also some N. American ones, but with the exception of *Aspl. Germanicum* which is easy to produce, I have so far none but *Foresiense* × *trichomanes*. The *Germanicum* hybrids obtained by me so far are not fertile.

I mean by fertility the production of sound spores, not the production of sori and sporangia which are as abundant, if not more so in hybrids than in their parents.

It is much to be hoped that some American pteridologist can be induced to tackle the same problems with North American hybrids, of which they have there many more than we have in Europe, at least as far as the genus *Dryopteris* is concerned, whereas we, in Europe, have more *Asplenium* hybrids than they have in the States.

Miss Margaret Slosson has experimentally produced *Aspl. Ebeneoides* (*Aspl. platyneuron* × *Camptosorus*) and M. Amédée Hans, by a stroke of luck, has obtained *Aspl. trichomanes*

confluens, a hybrid between *Aspl. trichomanes* and *Scolopendrium vulgare*, which had been found wild in England. Should these hybrids still be alive and nursed somewhere, where there is every chance that they will give a few spores sooner or later, what a splendid chance for studying their offspring !

Experimenting with *Polystichums*, of which we have four hybrids in Europe, has not much interest, at least as far as the law of Mendel is concerned, as they are so near that it is often a problem to distinguish the parent species, whereas in the case of ferns which are so different as *Aspl. Foresiense* and *Aspl. trichomanes*, or *Aspl. platyneuron* and *Camptosorus*, experimenting on their offspring could bring most interesting results ; the same with *Aspl. trichomanes confluens* and with *Polypodium Schneideri*.

Returning to the Brissago hybrid, I may state that the hybrid *Foresiense*×*trichomanes* seems to have now been found everywhere where *A. Foresiense* has a station common with *A. trichomanes*. It was first mentioned by R. de Litardière, who described two forms of it, both found in the same place in France. The first, called after the finder, *A. Pagesii*, the second named *A. Guichardii*. The first nearer *A. trichomanes*, with only one fibrovascular bundle and in which the rachis is chestnut until near the top ; the second nearer *Foresiense*, with two bundles, and in which the dark brown rachis reaches only half way up the lamina.

They were described by M. de Litardière in Bull. Geogr. Bot., 1910 and 1911.

Both B. and L. hybrids have only one fibrovascular bundle and as the rachis is dark until near to the top, they would therefore both come under *A. Pagesii*.

I have seen the samples of M. de Litardière, who has many more since the above two were first described. They are very polymorphous, as are also those in M. de Tavel's herbarium originating from Brissago.

Some in M. de Tavel's collection are identical with some in M. de Litardière's collection and with the L. and B. ones ; some very different.

I will point out again that my L. and B. hybrids are exactly alike, though one, the B. hybrid, is potted in pure sand and the L. hybrid is potted in heather earth ; but otherwise they are grown under the same conditions. I will point out especially that when the L. hybrid was quite young, it was so much like *Foresiense* that it is a great luck that I did not throw it away with the many *Foresiense* with which it was mixed. (*Foresiense* is simply pinnate when young, and already abundantly fertile). Fortunately, I observed some dark shading at the very base of the stipe. It was only with the fifth frond, about one inch long, that some tendencies toward *trichomanes* appeared, though with the exception of the base of the stipe, the rachis of the frond was quite green. I have lost these first fronds which decayed, but I have saved one, about two inches long, in which only half the rachis is dark, thus bringing it into *Guichardi*. *Guichardi* and *Pagesi* may therefore be one and the same fern, taken at different ages.

The number of fibrovascular bundles is in itself not a sufficient criterion to classify ferns. It frequently happens that ferns have only one bundle when young and more when older.

PAUL KESTNER.

FERN HUNTING IN SWITZERLAND.

Lausanne,

November 4th, 1935.

Dear Dr. Stansfield,

Since my last letter of a year ago I have made many sowings, especially with a view to obtaining hybrids, also to increasing my collection, which is now nearly complete as far as European ferns are concerned. My difficulty in this latter direction is not in obtaining young ferns and carrying them as far as maturity, but in keeping some of them alive more than two years.

However, more experience is acquired every year and there are but very few which I cannot now manage, *Aspl. lepidum* being still the *enfant terrible*. *Cheilanthes Persica* (*Ch. Szowitzii*) is another, but both I now manage to keep alive until they have given me spores, which enables me to sow again. How much easier it is to keep a collection of tropical ferns as I did in days past, when it was possible to have hot houses and gardeners to look after them !

A great difficulty is due to the fact that I have to be absent for weeks, one or several times a year. Keeping ferns is like keeping poultry or rabbits : it chains one to the home, or you find disaster on your return.

Of course, I do not mean those ferns that can be planted out in the garden and with which I have never had much trouble, but I mean the little things that live in the rocks in the south near the sea or high up in the Alps, especially the first which have to be kept in the greenhouse where the atmosphere does not suit them and also those which are eaten by the slugs. These I have also to keep inside.

I had the pleasure to make a fern hunting trip this summer with Dr. de Tavel and M. Oberholzer.

We first went to Engelberg, where there is one of the very few Swiss stations of *Polyst. Braunii*.

In this station it is fairly abundant and well hidden. It is well guarded by the Revd. Father Dr. Konrad Loetcher, Professor at the Conventual College there, a very distinguished botanist. He was good enough to take us to the station, which saved us a possible two days' search and he even allowed me to take away a plant. We had hoped to find the hybrid with *Polyst. lonchitis*, which is there also, but had no success in that direction.

From there we went to Samstagern, which is M. Oberholzer's home, between the lake of Zurich and Einsiedeln, the celebrated Convent and place of Pilgrimage. On the way, however, passing the shore of lake of Lucerne, M.

Oberholzer asked us to stop just before Küssnacht, where he wished us to visit a station of *Cyperus longus*.

The spot where we found the plant is not a hundred yards away from where the unfortunate Queen Astrid was killed a few weeks later !

In Samstagern we stayed a few days as guests of M. Oberholzer. He took us to see all the treasures he has discovered by diligent search in the neighbouring country.

A. viride plumosum was our first object. We went to see the plant *in situ*. When we got there, there were yells of despair. The plant was dry ! There had been clearing of trees carried on there and the full sun had reached the fern. M. Oberholzer had been there this summer and as the fern then already seemed to be threatened, he had moved a small portion of it and had it potted and nursed at his home, where it was not looking very brilliant.

I examined the plant (the one left *in situ*) and saw the matter was not desperate. The fronds were fairly dry, but still green. We decided to remove the plant and we took it home. We sprayed it and kept it close. The next day most of the fronds had revived. The plant had three crowns which could easily be separated. The question was, who should take care of it ? M. Oberholzer has not had, so far, much experience in growing difficult ferns and besides had not the proper accommodation.

I, for my part, was afraid of the responsibility if I took it with me, so Dr. de Tavel was asked to decide. He pronounced I should take two crowns and M. Oberholzer should keep one.

I have since nursed these ferns and hope to carry them through. One has put on two fronds, the other not, and as the winter is coming when I shall hibernate these ferns as cold as possible, there is no chance of their growing more this year.

In the neighbourhood of this *plumosum* there were several well incised and fertile ones and possibly, by sowing from

them, some true *plumosums* could be obtained. This I shall try and I have sent you a frond, chosen among the best, for you to try also.

Dryopteris remota : M. Oberholzer took us the next day to a densely wooded valley, where a form of *D. remota* has formed a large colony and evidently reproduces itself freely as *D. subalpina* does elsewhere.

This Oberholzer hybrid is, however, very different from the *remota* of Al. Braun which he discovered near Baden-Baden and of which Luerssen has a very good reproduction on page 396 of his classical book. It is very different from *subalpina.*

I have, unfortunately, very few fronds to distribute, as the plant I planted last year in the garden has only given two. It is one of these fronds I am sending you for examination. This is the fern M. de Tavel, in his letter appearing in the last number of The Gazette, mentions as a possible hybrid of *paleacea* × *dilatata.*

That *subalpina* may be a hybrid of *paleacea* × *dilatata* is quite possible, as it is apogamic as *paleacea* generally is, and that *Boydii* is also a hybrid of *paleacea*, but of the densely paleaceous form of it, is almost certain.

I shall try the Oberholzer hybrid as to apogamy, but so far I can see nothing in it which can justify the idea of a descent from *paleacea.*

That it retains its freshness far into the winter is no more proof than the same fact is for *subalpina*, which remains fresh quite as long.

The frond I am sending was cut a few days ago, still standing upright and fresh. *Subalpina* also has its fronds still quite fresh and upright, whilst the fronds of *remota* (at least what I have in my garden as true *remota*) fell two months ago and the bases of the stipes are now quite rotten and the rachis black, behaving in this respect like *cristata* and its relatives

and hybrids, European and American. I am sending you also a green frond of my *remota*, the only one I possess and which I bought from M. Correvon at Geneva, having never found one myself. It has a green stipe in spring, getting straw-yellow in the summer and then passing to darker and darker chestnut shades in autumn.

This is carrying me away from the account of our trip, but I do it on purpose, as I am anxious to awaken an interest among readers of The Gazette and, if possible, a discussion. I intend writing a note on *remota* for The Fern Gazette after having visited the herbaria of different universities and institutes as well as private ones. Inspection of the Lausanne and Geneva herbaria has so far shown there is a great diversity of forms. Anyhow, *remota* has always been considered to be sterile and this, so far, besides the lesser division of pinnae and the yellow colour of the stipes (*Luerssen*, *Druery*) are the only botanical characters by which it has been described to be different from spinulosum.

With respect to sterility of hybrids, I am of the opinion of Lowe, who said there was no absolute sterility in hybrids, and as you have once raised true *remota* from spores, you have confirmed this. Now and then, if you watch patiently perhaps for years, you will find a sporangium with normal spores, I believe, in any hybrid.

Now, in the Oberholzer hybrid, we have a fern which can be said to be fertile as it forms colonies and takes on therefore the character of a species, as *subalpina* does. Certainly a most interesting fern which, one day, when it shall have had time to spread, will have to be classed as a species.

I have now all these hybrids in my garden, growing side by side and they shall be compared at all seasons, taking into account biological, as well as botanical, characters. The only one I have not is Boyd's hybrid, of which I understand you have the only specimen alive and which you wrote me some time ago you had found to be fertile, another fertile hybrid, therefore, of *remota sensu lato*.

Dryopt. paleacea : M. Oberholzer also took us to the station he has discovered of true *paleacea*, the real southern form, the rachis densely covered with golden scales, tall and vigorous. This is the only station so far known in Switzerland, north of the Alps. It is a very beautiful fern. The variety *paleacea disjuncta* is there also.

Cystopteris alpina : In a village not very much higher than the lake of Zurich, M. Oberholzer has discovered in a wall a few very characteristic and true specimens of this truly alpine fern. He took us to inspect it.

Aspl. Murbeckii (*Ruta* × *septentrionale*) : In the wall of a quay, not much more than 6 feet above the level of the lake, there was a dense tuft of this hybrid discovered by a guest and watched by him ever since.

This autumn I had the pleasure of making a trip with Mr. E. Walter in the Vosges. We discovered nothing new, but several important stations of *subalpina*, which Mr. Walter has now ascertained to be common not only in the Vosges, but also in the Jura and in the Pyrénées, where it is found in colonies.

We hunted for *Polyst. Braunii* without success. M. Walter has this year discovered this fern in the southern Vosges. It was not known before from the Vosges mountains, though it has been hunted for by many botanists. He discovered it in a damp ravine difficult of access and well hidden ; also the hybrid, *Braunii* × *lobatum*, a capital discovery. I suppose there is still a chance of *Braunii* being found in Scotland ?

Mr. Walter has also discovered one plant only of *Aspl. lanceolatum* in the *south* of the Vosges, thus bringing this fern a step further away from the sea.

At the botanic garden in Saverne, where our trip ended, the fern collection has increased since last year. I planted a few rock ferns I had brought from Lausanne, seedlings of mine, especially North American *Aspleniums*, which I cannot grow in my garden because of the slugs.

All difficult plants I have to grow successfully in pots. I planted them horizontally in fissures of sandstone, with but little hope to find them again next year.

My experience with trying to acclimatize truly rock ferns, even if planted quite young, has generally failed with the exception of the common ones, and I am now convinced the only process to attain a result is sowing the spores in crevices and fissures and this will be my work in Saverne and in other places next year.

From my garden in Lausanne I have not much to report, excepting that the slug pest is complicating things considerably. I have also some trouble with a black rust, which attacks *Cyst. montana* and other ferns if I do not isolate the infested plants. It has attacked some fine tufts of *Cryptog. crispa*, which I had well established since I built my garden, about seven years ago. I believe it was the time when I had the pleasure of your visit.

Yours sincerely,

PAUL KESTNER.

P.S.—*Re* Borbasio : The name of the godfather of *Dr. subalpina* is Borbas, the Bohemian botanist. In Mr. Walter's diagrams, from which you took Borbasio, it is true he uses that name. Mr. Walter is following Dr. Guetrot, an authority on hybrids, who has advocated the terminology in " o " instead of " i " for hybrids. This does not seem to be much followed.

P.P.S.—I have just received two plants of true *remota* from the Vosges, sent by Mr. E. Walter.

One of the objects of our excursion of this year in the Vosges at the beginning of October, was to hunt for this fern which had now and then been found in these mountains, especially by Mr. Issler, a well-known botanist in Colmar, and also by Mr. E. Walter.

A place where Mr. Issler had found several plants is called Fischboedle, a pond well known by tourists at the end of the valley of Metzeral. This pond is surrounded by very steep

and precipitous slopes and cliffs several hundred metres high. Mr. Walter and myself spent some time there in search of the fern on the 7th October without result. But I had better quote from Mr. Walter's letter :—

" I have just spent a few days in Colmar and took the opportunity to induce my friend, Mr. Issler, to go with me to Fischboedle to hunt for *remotum*. We did find it, but on the opposite side of the pond to that where we had hunted in vain at the base of an ' eboulis ' of fallen rocks. We had to climb and work our way with difficulty in a chaos of big boulders. We found the fern in four or five different places not far away from one another, two or three plants each time. An ice-cold rain was falling and there was fog. When it lifted we could see the snow was not far off. Lunching under the dripping fir trees was not pleasant. However, we were very satisfied with our successful expedition. Every plant seems to have the same origin.

" On this expedition we did not see *subalpina*, though *dilatata* was there as frequently as *spinulosa*. I send you by post two plants. As regards the *remota* from your garden, it is certainly very different from any plant I possess and from any I have seen. Is it not of extra-European origin ? "

What is to be noted is that in this find at Fischboedle, as well as in the first of Mr. Issler at the same place, several plants were found together, which seems to prove that the fern is, at least partially, fertile. A. Braun's original discovery in 1834 near Baden-Baden was also of several specimens growing side by side. H. Christ mentions a find of three plants growing side by side near Liestal (Switzerland).

Yesterday I went to Geneva to inspect the herbarium at the Conservatory of Botany, where I did not find any specimen of the true *remota* as I have it in my garden, but I found *remota* from various places, especially from the Vosges and the Black Forest exactly like the one Mr. Walter has sent me.

Subalpina from the Vosges, Black Forest and Switzerland is mixed with *remota*. The same in the Lausanne herbarium.—P.K.

THE OFFSPRING OF HYBRID FERNS.

" Thy new race shall be of woe—
Less goodly in their aspect, in their years,
Less than the glorious giants who
Yet walk the earth in pride,
The sons of Heaven by many a mortal bride."

(Byron : " Heaven and Earth.")

A further letter from M. Kestner elaborates the point that the first generation of hybrid ferns are as large as, or larger than, their parents while their offspring, i.e. the second generation, are much smaller than the first. This is exemplified in *Dryopteris subalpina* when growing wild. Isolated specimens are quite as large as the parent species but when the hybrid is found in quantity (presumably a second generation) the individuals are dwarfed. This contention is borne out by our experience in this country. The original British (Westmorland) *remota* is larger than the average *filix-mas* or *spinulosa*. The only seedlings from this hybrid are those (about half a dozen originally) which came up self-sown, in the pot in which the parent was growing at Todmorden more than 60 years ago. These have never attained to half the size of the original and rarely, if ever, exceed 15 or 18 inches in height. They are moreover less symmetrical than the parent and have a slightly ragged outline. The seedlings I have raised from *uliginosa*, another hybrid, are few and small and feeble and show some lack of symmetry.

Again, although *Asplenium trichomanes confluens* is larger and more vigorous than normal *trichomanes*, the two seedlings which have been raised from it by my brother and myself

respectively, although showing the general character of *confluens*, were small, puny and irregular and both were short-lived in spite of every care to preserve them. Also the only seedlings which have been raised (presumably) from *A. lanceolatum microdon* turned out to be *Scolopendriums* " not normal but not belonging to any recognised variety—simply little bastard rogues " (see GAZETTE, Vol. V, pp. 15 and 16). I fear *lanceolatum microdon* is now extinct in cultivation, but it may yet be re-found in the South or West. *Adiantum-nigrum microdon* however still survives and I shall look carefully for any perfect spores upon it (there are plenty of abortive sporangia) and should any be found they will be the subject of another experiment of this kind.

It still remains to be seen what *Boydii* seedlings will be like when mature, but they are certainly more vigorous and symmetrical, as well as much more abundant, than those from *remota* and *uliginosa*. I presume that *subalpina* has not yet been raised from spores under cultivation though, no doubt, this will be easy enough.

F.W.S.

NEW LIGHT ON POLYPODIUM v. PLUMOSUM, WHILHARRIS.

On looking through some old letters from the late Mr. E. J. Lowe to our former Hon. Secretary, Mr. George Whitwell, recently, I came across the following dated September 9th, 1893 :—" I should very much like to get true plants of the three Lake District *Polypodies*, i.e., *Barrowii*, *Prestonii*, and *Hadwinii*. I have received one from Somerset very distinct from any other I have seen ; it is tolerably large, very narrow and as crisp as a *Scol. v. crispum*. It was found at Pennard, above Glastonbury. I should like to have plants side by side to compare them together."

It seems to me that the above can only refer to *plumosum*, Whilharris (the origin of which we have hitherto sought in vain) especially as we know that that fern came to Mr. Whitwell indirectly from Mr. Lowe. The question now is, " Who was, or is, Whilharris ? " Does anyone know a person of that name who frequented the neighbourhood of Glastonbury ? If so, I should like to be put in communication with him. He (or she) has, too long, remained a benefactor unknown to fame.

F.W.S.

THE ALED VALLEY.

Some years ago Dr. Rowlands gave us an account of a visit to the Aled Valley, in Denbighshire, and of its ferns and of how he found *Hymenophyllum* later on, and elsewhere. This September I reversed his order by finding some filmy fern first, also elsewhere, and following him afterwards to the Aled River. It was during a stop for tea by Llyn Ogwen, near Capel Curig, that I climbed down a miniature cavern between two huge boulders to look at a *filix-mas*, and found one hand resting on a thick patch of moss which I stopped to examine. It was more than moss : it was a mixture of that and Liverwort and *Hymenophyllum*, very dry and brown, growing on the side of a boulder so that it is a wonder it survived the summer ; but it was still alive, and with every promise of appreciating the removal of a part of it to better quarters in which I hope to see new fronds when the spring comes.

I had only some hours to spend in the Aled Valley, so walked from the waterfall along the hill-top for about a mile and then worked up the riverside towards the Falls. The Green Spleenwort is still there, as Dr. Rowlands noticed, and

in some abundance ; and I saw Holly Fern also, unless it was a young *aculeatum*, though I think not, as there was none of that species about, as far as I could see ; nor were any varieties found, but I can endorse Dr. Rowlands's enthusiasm for the locality's fern interest.

E. A. ELLIOT.

CONCERNING SOUTHPORT SHOW.

AN APPEAL TO OUR MEMBERS.

All members of the Pteridological Society are aware that for some years past Southport Flower Show has provided splendid classification for competitive exhibition of Hardy Ferns. The principal class in the series is for a group occupying about a hundred square feet of ground space.

At the outset I was able to obtain the gift of a handsome silver cup for this class, which our President eventually won outright. I obtained a second cup from the same donors, and this became the permanent property of Mr. Robert Bolton in 1933.

Our Society provided ten guineas for a trophy to be won outright in the near 1934, but, with the best will in the world, the Committee felt unable to repeat the drain upon the Society's slender funds. The matter was discussed at the meeting of members held at Southport on August 29th. It was readily agreed that this Show provides the finest classes for Hardy Ferns in the country and that their display is calculated to focus the attention of the public upon the beauty and garden value of choice ferns. Therefore, it is desirable that the British Pteridological Society shall demonstrate its appreciation and support the Show by some means.

The outcome of the discussion was that several of the members present expressed willingness to subscribe a guinea each toward the creation of a special fund for the purchase of a perpetual challenge trophy for the big group class. It

was agreed that I should undertake to collect subscriptions, and I now make an appeal to all members to subscribe something so that we may secure a sum ample for the purchase of a trophy worthy of the class and a credit to ourselves as a Society.

It is unnecessary to send cash yet, but I shall be very glad to receive early promises of donations so that we may form an idea of what kind of trophy we may seek.

If cash reaches me at the beginning of June it will enable consultation with the Committee for the purpose of deciding what and whence we shall purchase, allowing time for negotiations and suitable engraving, photographing with a view to securing Press publicity, etc., before handing the trophy over to the Southport officials.

Your generous response will be greatly appreciated.

A. J. MACSELF.

Domarin,
Hamilton Road,
Reading, Berks.

THE BRITISH PTERIDOLOGICAL SOCIETY

THE SOCIETY originated, in September 1891, in the Lake District with headquarters at Kendal. Its members were, however, distributed throughout Great Britain and Ireland, whilst some few reside in the Dominions and U.S.A. Its declared objects were :—

(i) The Study of Species and Varieties of British Ferns ;

(ii) The Recording of Information with regard to Ferns generally.

The British Fern Gazette was established in September 1909, publication being quarterly until the commencement of the war. After the war publication was restricted to two issues per annum on account of the increased cost of printing and the decrease in the number of members. It is hoped shortly to resume quarterly publication.

Members are invited to communicate with the Hon. Secretary on subjects of interest with regard to British Ferns.

Certificates are awarded to new ferns of distinction of which plants or characteristic fronds are shown at the Annual Meeting for adjudication. The Annual Meeting is held usually in August or September, at some place where ferns are abundant and from which excursions for fern hunting can conveniently be arranged. These excursions are an important feature of the Society's activity.

Fronds may be sent to the Hon. Secretary to be identified or named at any time.

Recently a Sub-Committee of the Society undertook the correct naming of the National Collection at Kew and, in conference with the Director and staff, planned and arranged the present fernery, supplementing the collection with gifts of plants from the ferneries of some of the members.

The collection in the Royal Horticultural Society's Garden at Wisley was similarly dealt with and augmented.

The Society is affiliated to the Royal Horticultural Society, which is also an individual subscriber to its funds.

The Committee is endeavouring to increase the membership of the Society and, through this and by other means, to encourage the more general cultivation of the varieties of British ferns. Any lover of horticulture is eligible for membership and the subscription is 10s. per annum (due in advance at or immediately after the Annual Meeting), which entitles members to copies of *The Gazette*.

The Hon. Treasurer or Hon. Secretary will be pleased to supply members who may desire it with Bankers' Orders for the convenient payment of subscriptions.

Further particulars may be obtained from the Hon. Secretary,

F. W. STANSFIELD, M.D., F.L.S.,
120, Oxford Road,
Reading,
England.

HARDY EXOTIC AND BRITISH FERNS.



CORONATION CUP.

Awarded by the Royal Horticultural Society for the most meritorious exhibit at their great Summer Show. My collection of Hardy Ferns on this occasion was considered one of the finest groups ever staged at a Horticultural Exhibition.

During the last 5 years we have been awarded 50 Gold and Silver Medals, Diplomas, & Certificates for New and Rare Hardy Ferns.

Our collection of Hardy Ferns is one of the most complete in existence.

Headquarters for Alpines, Perennials, Liliums, Water Lilies, Aquatics, New and Rare Shrubs.

Catalogues free—

PERRY'S HARDY PLANT FARM,

ENFIELD, MIDDLESEX.

VOL. VII. No. 2.

= The =

British Fern Gazette.

JUL 2 1
NATIONAL

June, 1936.

EDITED BY

F. W. STANSFIELD, M.D., F.L.S.

(120, OXFORD ROAD, READING.)

PUBLISHED BY

THE BRITISH PTERIDOLOGICAL SOCIETY

President: *Mr. W. B. Cranfield, F.R.H.S., V.M.H., F.L.S., East Lodge, Enfield Chase, Middlesex.*

Hon. Secretary: *Dr. F. W. Stansfield.*

Hon. Treasurer: *Mr. J. J. Sheldon, F.L.S., "Monkhams," Lower Road, Great Bookham, Surrey.*

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Athyrium f.f. fimbriato-cristatum, **Garnett.**

THE
BRITISH FERN GAZETTE.
NEW SERIES.

VOL. VII. JUNE, 1936. No. 2

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EDITORIAL NOTES.

The Angel of Death has been busy among our members recently and we have lost several valuable and important members, namely, M. Paul Kestner, Mr. Frank Butler (of Reading), Mr. Francis Ransom, Mr. Michael Stephens (of "Ink" fame), Lord Wakehurst of Ardingly, and Mrs. Taylor (of Mold, N. Wales). On other pages will be found obituary notices of these by people who knew them well. We shall miss very much the frequent and interesting contributions to our pages of M. Kestner and, still more, his regular and friendly letters, chiefly on ferns but also on more personal topics ; he had grown into the character of an old friend. The lady and the other gentlemen named did not attend our meetings, but Mrs. Taylor was an interesting and interested correspondent on fern subjects.

JUL 22 1936

New lady members who have joined the Society during the past year are Mrs. Brown, of Donaghadee, Mrs. Robert Bolton and Mrs. Thorrington, while other valuable recruits are Captain Dunston and Captain Hawker in the South-West, Mr. John Stormonth, of Kirkbride, and Mr. C. W. Coward, of Grasmere, in the North, with Mr. J. W. Dyce, of Woodford Green, Essex, in the South-East.

Mrs. Smithies, of Kendal, has sent the Society a present of books from her late husband's library, comprising most of his fern books and a few back numbers of THE GAZETTE, some of which we hope will fill gaps in the series of members who lack them.

Captain Dunston, of "Burltons," Donhead St. Mary, via Shaftesbury, is anxious to obtain, if possible, all the back numbers. He has succeeded in collecting the whole of Vol. I except No. 7, and will be obliged to anyone who can spare him a copy of that issue. The University of Geneva (Professor Hochreutiner) also wants Nos. 2, 5 and 7 of Vol. I, and Nos. 13, 20, 21, 23 and 24 of Vol. II. The Director of Kew Gardens wants, for the Kew Library, Nos. 2, 5 and 7 of Vol. I, Nos. 13, 19, 20, 21, 23 and 24 of Vol. II, and Nos. 32 and 36 of Vol. III, and Professor Weiss lacks the same numbers as Kew of Vol. II.

The following extract from *The Times* of March 21st, 1836, republished 100 years later, no doubt relates to an ancestor, probably the grandfather, of our late member, Mr. James Moly, of *pulcherrimum* fame. Although the subject of the memoir is not known as a fern grower, it might be said of him, as it was of Banquo, "Hail! Banquo, thou shalt get kings though thou, thyself, be none."

FROM *THE TIMES* OF 1836.

MONDAY, MARCH 21, 1836. Price 7d.

Died, on the 3rd inst., at Hawkchurch, at the advanced age of 103 years, Mr. James Moly. Though his faculties had been for some time impaired, there were intervals during which he retained a perfect recollection, and was enabled to give a clear account of the diversified

scenes of his long protracted life, and of public events there was not one upon which his memory was more vivid than that of the rebellion in Scotland in 1745. He was in London at the time—then about 12 years old, and it is not many weeks since he detailed the account of his having been present at a review of the trained bands in the metropolis by King George II, and of the fear and consternation with which he remembered its inhabitants in general were filled on account of the Pretender, who was then at Derby and shortly expected to enter the city.—*Dorset Chronicle.*

Dr. Rowlands has sent us fronds and a plant of a more than usually foliose form of *Allosorus crispus*, which Mrs. Rowlands found recently in the Lake District. It will need a year or two of cultivation before it can be seen how it will turn out as a variety. The Doctor sends us also a frond of an *Athyrium* resembling Mrs. Wilson's *stellatum*, which he has found near Lodore. Also a dried frond of another *Athyrium*, found in South Wales some years ago, which is strikingly reminiscent of *P. ang. perserratum*, Patey, although the cutting is sharper and finer. It is modestly stated that "an occasional pinna is a little ragged," but the frond sent does not show this and we think the fern is well worthy of being cultivated and perpetuated.

At the last moment before going to press we regret to learn of the death of our new member, Mr. C. W. Coward, of Grasmere, at the early age of 38, due largely, we understand, to the experiences of military service during the Great War.

A review of the Revd. Canon Kingsmill Moore's book, "Joys of the Garden," will be found on another page of this issue.

OUR FRONTISPIECE.

Athyrium f.f. fimbriato-cristatum, Garnett.

The figure is from a photograph of a plant in the Editor's garden. This fern was first brought to the notice of the Society at a meeting held at Bowness on August 7th, 1899, the President, Mr. C. T. Druery, being in the Chair. It was exhibited by Mr. John Garnett, who said he had raised it

from "mixed spores," the actual parent being therefore unknown. The name *fimbriato-cristatum* was officially bestowed upon it. When Mr. Druery's book, "British Ferns and their varieties," was published, later, it was referred to as "*A. f.f. Clarissima cristatum*, Garnett," and was described as "a lax crested *Clarissima*-like variety and also aposporous on frond backs." There is, however, no reason to suppose that it had any connection with *Clarissima* and anything of the kind is ruled out by the fact of its having been raised from spores which *Clarissima* has never been known to produce. Apart from the lace-like cresting there is, however, a certain resemblance between the two varieties. We believe that Mr. Garnett raised offspring from *fimbriato-cristatum* by apospory, but the children were not like the parent and were not considered to be worth keeping. The few plants now in cultivation are, therefore, all divisions of the original and none, so far, has shown any tendency to sporting. The plant does not take kindly to division, which accounts for its scarcity. We propose, this year, to make an attempt to raise plants by apospory and the result should be interesting.

THE ANNUAL MEETING, 1936.

The Annual Meeting will be held at Southport at 10 a.m. on August 27th, in a room kindly provided by the Corporation, in the Town Hall. After the meeting members who can do so will move on to Dolgelley, Merionethshire, "the Switzerland of Wales," for a few days' fern hunting and, as the district around consists largely of mountainous country, including Cader Idris, and has been comparatively little explored for fern varieties, some good finds are hoped for. There is good accommodation at hotels (licensed and otherwise), farm houses and private houses, but members who propose to stay for a few days are advised to secure berths in good time. An illustrated guide to the town and district can be had for 2d. (postage) from the Secretary, Advertising Association, Dolgelley, Merionethshire. In addition to Dolgelly, with its celebrated Torrent Walk, and Cader Idris, the

towns of Barmouth and Harlech are within easy reach with fertile botanical surroundings. The country is mainly non-calcareous, consisting largely of slate and grit rock formations. There are acres of *Allosorus crispus*, and *Dryopteris montana*, *Blechnum*, *Phegopteris dryopteris* and *P. phegopteris* are abundant in places. *Woodsia Ilvensis* has been recorded, but not recently. In spite of the comparative absence of lime, *Asplenium viride* occurs and the present writer found an imbricate form of it in 1871 or 1872.

THE SOUTHPORT SHOW, 1936.

The schedule of prizes for this, "The world's largest summer Horticultural Exhibition," has been published and contains the usual series of liberal prizes, trophies and medals to competitors in almost every department of horticulture. There are eleven classes for British Ferns, the most important of which, the "Group to be arranged for effect in a natural manner," provides four cash prizes, ranging from £17 10s. 0d. (first) to £8 (fourth), as well as a perpetual challenge trophy, value 30 guineas, presented by members of the British Pteridological Society. The offer of this challenge cup is largely due to the enthusiasm and engineering energy of Mr. Macself, who has been its persistent advocate and has been mainly instrumental in raising the money for its purchase. The Southport Show offers attractions of the highest character to every lover of gardening and is almost the only one at present known which gives adequate encouragement to growers of British Ferns. We hope the entries may be, if possible, better and more numerous than ever.

A CHALLENGE TROPHY.

For British Ferns at Southport Flower Show.

We have achieved our aim and secured a perpetual Challenge Trophy, to be offered annually in the Big Group Class for British Ferns at Southport Flower Show.

Members will remember that in the last issue of THE GAZETTE we explained our desire to raise a fund for the purchase of a trophy that would ensure an attractive award for what is undoubtedly the finest class of British ferns brought together at any flower show in the Kingdom.

Thanks to the generosity of a number of members of our Association, this became possible. Twenty-one subscriptions were received in response to our appeal, first through THE GAZETTE and then by letter, the total amount subscribed reaching the sum of £22 12s. 0d.

Through the medium of a personal friend who is a manufacturing silversmith, we were able to secure on particularly favourable terms, a handsome silver Monteith bowl on plinth for the sum of £21 10s. 0d. This bowl had really been made for another purpose, but was, through peculiar circumstances, left in the manufacturer's hands, and we obtained it at much below its actual value.

It was necessary that the Cup should be suitably engraved, and the wording appears :—

BRITISH
PTERIDOLOGICAL SOCIETY
Challenge Trophy
for British Ferns
at Southport Flower Show.

In addition to this we had a good substantial oak case, well lined, made for the reception of the Cup, and for these two items extra charges were made, bringing the total sum to £26 10s. 0d.

The Cup has been forwarded to the Secretary of Southport Flower Show, and we have received acknowledgment of its receipt and a letter from the Council expressing their pleasure and appreciation of the Society's gift.

Possibly some member who has not yet subscribed will feel disposed to contribute something towards wiping off the deficit of £3 18s. 0d., but we are more concerned that all who

possess collections of British ferns which will enable them to enter for the Group Class, which occupies practically a hundred square feet, will do their best to keep this class going with a strong entry every year in order that ferns of choice quality may be brought to the public notice at a function which draws horticultural enthusiasts in large numbers from all parts of the United Kingdom.

It is necessary for the continued popularity of the cult of hardy ferns that fresh recruits shall be gathered to the ranks of growers and, in our opinion, the exhibition of good examples is one of the most powerful and effective means to this end.

We append herewith a list of the names of subscribers to the fund, and our Secretary, Dr. Stansfield, has examined our receipt book to verify the accuracy of the statement of account. To each and every subscriber we offer grateful thanks.

A. J. MACSELF.

LIST OF SUBSCRIBERS.

F. N. Adkin
F. Atkinson
T. B. Blow
Robt. Bolton
Tom Bolton
Major Geo. Churcher
Alex. Cowan
W. B. Cranfield
Captain Ambrose Dunston
C. W. Grubb
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J. Lloyd
J. Lovelady
A. J. Macself
Geo. Monro
Revd. Canon Moore
Amos Perry
Dr. S. P. Rowlands
Dr. F. W. Stansfield
R. Whiteside

Audited and found correct,

F. W. STANSFIELD.

OBITUARY.

FRANCIS RANSOM, F.C.S.

Our Vice-President, Mr. T. B. Blow, writes : " By the passing of Francis Ransom I have lost a very old and greatly esteemed friend. With the Ransom family my friendship has been a long and intimate one, beginning as far back as the 'Seventies with William, the father of Francis. We possessed

a common interest in the botany of the neighbourhood of Hitchin, and this in course of time led on to the founding of the Hitchin Natural History Society with its body of workers in all branches of Natural History, and ultimately to the production of the *Natural History of the Hitchin Region*, in the publication of which Francis was a principal helper. In the year he was President there was the most notable display of objects of all phases of Natural History of the region, and about fifty microscopes were staged. So long as health lasted, he was an ardent and skilled worker both in Botany and Gardening. From me he gained his interest in Ferns, and in due time became a member of our Society. One of my chief pleasures was to advise him in the establishment of his fernery, which was enriched with many rarities from the Stansfield Fern Nursery at Sale.

Another hobby we had in common was the collecting of choice Japanese metal work, notably the beautiful little gems of carving which formed parts of the Japanese sword handles. Of the principal variety known as the Kozuka he possessed nearly a thousand pieces. After his health failed, and active outdoor work became impossible, it was one of the greatest pleasures to both of us to catalogue these. It was a long and laborious task, as he could only work for about an hour on the one day of each week that I visited him. Nearly every day he went for a motor drive, and each Friday he picked me up at my home at Welwyn and we completed the drive to his house at Newlands, Hitchin, had lunch together, and afterwards worked for an hour on our cataloguing. It was a slow task, too, as we were frequently driven to call in the help of Japanese experts, principally of Messrs. Yamanaka and their staff, for the translation of the artists' names and poems that were inscribed on many of the pieces. Some of the poems appealed greatly to him, and I think we were fortunate in finding an old scholar to convert them into tolerable English verse. Here is one of them which Ransom admired because he had seen a similar effect when our Blackthorn was in blossom :—

No. 532. POEM BY YOSHINOBU.

The South Sun shone upon the Prunus,
The Blossoms all were white ;
The Snow upon the Northern Hills
Produced a similar sight.
The difference was God's hand was there,
Which made the two alike.
All things are possible to Him :
He turns the day to night.
As the sparks do upwards fly,
So to man his troubles come.
'Tis his fateful destiny,
Until at last it calls him home.

By good fortune the catalogue was completed a few months before his death, and it gave him much pleasure as it enabled him to study the collection with far greater ease.

Another indoor hobby of his was stamps, of which he probably had a very high-class and large collection.

The end came quite suddenly, and he passed away without pain. I believe he was one of the founders of the Cremation Society, and it was fitting therefore that he was cremated at Golders Green. I, unfortunately, was ill at the time and could not be present. Apart from his family, I presume I shall feel his loss more than anyone. We still have his son Richard as a member and an enthusiastic worker.

THOMAS B. BLOW.

MR. FRANCIS RANSOM : A PERSONAL IMPRESSION.

By Reginald L. Hine, F.S.A.

I.

Much will be written and spoken at this time of Mr. Francis Ransom as a public man and a public benefactor ; and on that account alone he should be worthy of a good and lasting remembrance. It is one of the last sad offices of friendship to supplement such a record with an appreciation of a man's personal and private life, and those traits of character which lie deep and too often unobserved. It is all the more needful with such a man as Mr. Ransom, for, in addition to a natural shyness and reserve, he had inherited the Quaker habit of hiding his virtues away, so that one had slowly, almost surreptitiously, to discover his real worth.

When I was writing of his father, I was struck by the width and diversity of the elements that went to the making of his mind : " Study the materia biographica of his composition," I said, " and you will not know whether to class him as a pharmacist, botanist, archaeologist,

naturalist, publicist, magistrate, benefactor, or Quaker." Of the son precisely the same might be said. Mr. Francis Ransom's intellect was also compounded with scrupulous care and of many ingredients. I think, however, it was the scientist in him that predominated. The time came when he had to take charge of the growing business founded by his father. But he regretted having to abandon the fields of research explored under Professor Dunstan, and always envied those who were happily employed in the pure realm of science. Nevertheless, the influence of that early training remained in the thoroughness, exactitude, and precision that marked every piece of work he undertook.

His writings are to be found in the journals of many learned societies, and are not " to be understanded of the vulgar " ; but even laymen can enjoy his papers on " Diatoms," and " Belladonna " ; and his little brochure on " Medicinal Plant Names, their origin and meaning," published separately in 1899, is full of pleasant knowledge gathered out of ancient and long-forgotten authors. As a writer, I have profited much by the rigour and critical scrutiny of his shrewd brain, and whenever I look back upon my corrected proofs, and the original manuscripts of my books, I see dozens of emendations and addenda supplied, in all modesty and diffidence, by him.

II.

The other paramount influence in his development was derived from his spiritual ancestry. Somehow, one never thought of Mr. Ransom as a Quaker, for he was never prominent, like his father and his forbears, in the meetings of the Society. Though a birthright Friend, he had, by convincement, become aware of the saving grace of many other religions, and was in mind, if not in soul, a universalist. But, for all that, he possessed and retained most of the characteristics of Friends : their sobriety of speech and apparel, their circumspection, their habit of retirement, their distrust of " enthusiasm," of " runnings into the world," and of undue " divertisements."

That is the negative side of Quakerism. On the positive side this liberal-natured man felt as much as any Friend " the misery of his fellow creatures separated from the divine harmony," and, as a benefactor, supplementing his personal service with gifts of money, he contributed largely to the needs of his day and generation. Like most enlightened people, he felt that the main hope for the world lay in education, and more education, the progressive fulfilment of George Fox's noble plea for " teaching everything civil and useful in creation." That was why his duties as Governor and Manager of Schools gave him more pleasure than any other part of his public work. It was that also which prompted him to follow his father's example and come

to the aid of individual and necessitous scholars. There must be many alive and working, in England and beyond, who have been supported through their studies, and financed in their publications, by his secret assistance. Here I speak out of a personal sense of gratitude, for it is by now an open secret that "The History of Hitchin" and "Hitchin Worthies" would not have seen the light of day but for his generosity and that of Mr. Hugh Exton Seebohm.

III.

If you want the best evidence of a man's character and disposition, then go and look at his books. At any rate, Mr. Ransom's library gives unmistakable clues to his preferences in the pursuit of literature and knowledge. There is no poetry to speak of, and no *belles lettres*. The volumes that are most frayed have to do with Botany and Natural History—the predilection, if not the passion, of a lifetime. Other large sections relate to comparative religion, psychical research (to the study of which he devoted many years) and philology. Latterly he has been reading, and making his friends read, books on Eastern travel, for the more he was confined to the house the more he liked to trek through miles and miles of print into the wilds of Mongolia or the recesses of Thibet. And now he himself has taken the longest journey of all, to that bourn of which no history exists and from which no traveller returns.

On the shelves, or in cabinets nearby, there is his philatelic collection, a very choice one, it is believed, and for which he was still buying at his death. A month or two ago he showed me the Mauritius stamps with the natural pride and zest of a connoisseur, lamenting that he could not afford the finest example of all, just brought over from America, and valued at £4,000. He was also a collector of Japanese metal work, and with the help of his old friend, Mr. T. B. Blow, had just completed the annotated catalogue, in which the Japanese mottoes have been rendered very happily into English verse.

In another cabinet repose the original papers from which he and I, in 1931, prepared the Ransom pedigree. Since that was printed, we have been slowly gathering together letters, diaries, and household account books relating to the early members of the family, and on the last occasion I was with him, ten days before his death, we spent most of the time discussing the future of that collection.

He was not the man to exhibit any pride of family, but he sprang from a splendid stock of yeomen, settled for centuries round about North Walsham in Norfolk and Aldeburgh in Suffolk. The names of several of them figure in Quaker annals : that of Richard Ransom who, in the time of George Fox, suffered for fifteen years on account

of his faith in Norwich gaol ; of Mary Ransom (1682-1747), who was an acceptable travelling Minister for forty years ; of Mercy Ransom (1728-1811), one of the sweetest and saintliest women that ever breathed ; and if any one doubts that, let him read the account of her printed on pages 198-202 in the second volume of my " History of Hitchin."

Since the days of Queen Anne the Ransoms have been principal men in and about this parish of Hitchin : millers, farmers, copyholders, landowners, men of substance, men of sterling character, men of piety. What Hitchin owes to them as a family it would be difficult, even for a painstaking historian, to estimate. From generation to generation they have upheld their tradition of public service. They have laboured diligently and wisely for the place of their adoption, and have set an example, not easy to follow, to their fellow-townsmen, and their descendants.

PAUL KESTNER.

On the eve of Easter, on his estate near Lausanne, Mr. Paul Kestner, so well known to the readers of The Gazette by his interesting and well-illustrated articles, died from a stroke in his seventy-third year. A very remarkable man of the industrial as well as the scientific world has gone. Member of an old Alsatian family, he was *Maire* of the little town of Heidwiller and had therefore to live from time to time on his estate there, profiting by the opportunity for the pteridological exploration of the Vosges in the company of his friend Mr. Emile Walter, pharmaceutical chemist in Saverne. But, in first line, Mr. Paul Kestner was a chemist, and a very prominent one he was, well known by his many industrial discoveries. The Society of Chemical Industry of Great Britain bestowed on him its great medal, he being the first foreigner to receive this distinction. He was also honorary member of the most important British and American Societies of Chemistry and the founder of the French Society of Industrial Chemistry. All this activity did not prevent him from being founder and president of several societies of public welfare.

When fatigue and age constrained P. Kestner to withdraw from his heavy work, he settled down in Switzerland at Chailly, near Lausanne, and began, in addition to his chemical and biological researches, to study and grow ferns. In his wonderful garden (which contains, on a large rockery, the rarest specimens, and ponds with a choice selection of *Nymphaeas* and other aquatic plants), he gathered a nearly complete collection of European ferns, a great number of hardy ones from other continents, and many hybrids, some of which he received from his American friends. Not only was he busy in trying to obtain specimens of every hybrid fern (the North American included) by crossing the parents—in doing so he succeeded in producing *Asplenium Germanicum* from *A. trichomanes* and *A. septentrionale*, and also the combination *Asplenium forisiense*×*trichomanes*—but he wished to experiment in the laws of Mendel on hybrid ferns by sowing sound spores of them, if he was able to get them. He had prepared extensive experiments on that line, and important results were to be expected when inexorable death called him away from this promising work. Who will be able to resume it ?

Mr. Paul Kestner was very much liked by all who knew him, for his courtesy, his charm, and, in spite of his prominence, by his great modesty. We tender our sincerest sympathy to Mme. Kestner and his daughter.

(Dr.) F. de TAVEL.

LORD WAKEHURST : 1861-1936.

To many the deceased gentleman was better known as Mr. Gerald Loder, than whom no more delightful personality existed in the worlds of politics, commerce or horticulture. The fifth son of the late Sir Robert Loder, he was educated at Eton and Cambridge, was called to the Bar in 1888, and became Member of Parliament for Brighton, which constituency he represented for many years. He was Private Secretary to the Rt. Hon. C. T. Ritchie when President of

the Local Government Board, Secretary to Lord George Hamilton when Secretary of State for India, and in 1905 became Junior Lord of the Treasury.

He was elevated to the Peerage in 1934, taking his title from his home to which he was so greatly attached.

Always associated with railway enterprise, he was Chairman of the London, Brighton and South Coast Railway of which, when merged in the Southern group, he became Deputy Chairman and was elected Chairman in 1932. He had been President of the Royal Horticultural Society in succession to the late Lord Lambourne, but on his election as Chairman of the Southern Railway he resigned his Presidency.

Lord Wakehurst loved horticulture. From time to time notable collections of rare flowering shrubs were exhibited by him at the various shows of the R.H.S. He was President of the Royal Arboricultural Society and, until 1932, President of the Horticultural Club. It is largely owing to his efforts that the headquarters of the Club are within the precincts of the R.H.S. new hall.

He was a Fellow of the Linnean Society, and it was only at the last annual meeting of the Royal Horticultural Society that he consented to accept the title of V.M.H. (Victorian Medal of Honour), the highest award within the power of the Society to bestow.

Those who enjoyed his acquaintance have lost a sincere friend, whose delightful personality endeared him to all with whom he was brought in contact.

W.B.C.

BUTLER.

Although a convert comparatively late in life to the fern cult, Mr. Frank Butler, of Reading, acquired a fine collection, grew them well and was well on the way to become an expert when he died from a painful and hopeless disease. He had long been a successful amateur gardener, but was better known

as a dog-fancier and his services as a judge of these animals were constantly in requisition all over the three kingdoms. A man of genial and friendly disposition, he had a wide circle of friends, by whom he will be greatly missed, and by none, outside his own family, more than by the small coterie of fern growers in Reading. Although he was not a fern hunter he has been instrumental in preserving and introducing a fine form of *Scolopendrium v. crispum*, which was found in Devonshire by his late friend, Mr. Barber, and given by him to Mr. Butler, who passed on pieces to his own friends. It is a thoroughbred *crispum*, quite barren, but of stout texture and a good grower. With me, although quite unprotected, it has stood the winter better than any other form of *crispum*. We speak of it now as "Frank Butler's *crispum*."

F.W.S.

FERNS AT CHEDDAR GORGE.

On November 1st, 1935, while driving from Devonshire, I was fortunate enough to pay a long-hoped-for visit to the Cheddar Gorge, and had time to go into one of the caves. I was expecting to find a few minutes for botanizing outside, but did not think I should see ferns actually growing inside. However, at the first stop made by the guide, to illuminate a most interesting and beautiful "chimney," a number of small ferns were to be seen about 25 or 30 feet up, and about two feet from the ground there were numbers of prothallia and some first fronds rising from them.

The fully grown plants were difficult to identify, owing to their distance and the dazzling light and reflection, but I think they were all Hart's tongues. There is some moss also in various places, and the guide suggested that the "seeds" have been water-borne, but as there is an excellent ventilation it is possible that the spores arrived by air.

On leaving the cave there was time for me to walk up through the Gorge and make a quick search for plants, and I was fortunate in seeing a small but very healthy-looking

Ceterach wedged in a damp cleft about a foot from the ground. I had never before seen one anywhere but on a wall, but have no doubt that further search would reveal more plants of this species in the cliffs, on which *Polypody* and Wall Rue are abundant.

E. A. ELLIOT.

POLYSTICHUM ANGULARE DIVISILOBUM PLUMOSUM FOLIOSUM, H.S.

This famous fern, at first sight, seems to differ but little from other *plumose divisilobes*. As its name implies, it has a thicker texture than most of the other *plumosums*. Its most remarkable peculiarity, however, is its faculty for producing "good things" from its spores. It came to Mr. Henwood from Sale as a comparatively young plant and before its value as a parent had been recognised. It is more fertile than *laxum*, *densum* and *Baldwinii*, but it does not produce an abundance of spores regularly and, in some years, none at all can be obtained. Mr. Henwood has been most generous in giving away spores whenever there was a good crop. It has never produced anything bad or worthless, but, though the majority of its offspring are *plumose divisilobes*, there is generally a proportion of aposporous forms, some of them being *pulcherrimums*, some "*pellucidums*" or *prothalliferums*, while others are pure *plumosums*, *divisilobes* and various combinations of these several characters. I have quite half a dozen *pulcherrimums* from this source and have, this year, a very fine *plumosum* of high quality. There is also another *plumosum* which has been grown under rather exposed conditions and which shows evidence of *acutilobum* character combined with *plumosum*. Both these ferns seem to be vigorous growers and the acutilobe one is freely fertile and should throw some good things among its offspring. The *pulcherrimums* and *prothalliferums*, like others of their kind, require very good cultivation to keep them alive, and will sulk or die under unfavourable conditions. Some of them,

indeed, do this even when treated with every care which can be given them. *P. a. pulcherrimum*, H.S., No. 9, is one of these and both Mr. Henwood and myself have lost plants of it though there is still a little one left which seems healthy but does not "get on." Another very promising one, of my own raising, I named provisionally *kalotrichoides*, considering it to be the analogue of *kalothrix* in *Athyrium*. This is a great beauty, but obstinately refuses to thrive in spite of every attention to its needs. A new crop of seedlings, still in their babyhood, is coming on and may be expected to include new treasures. The original plant of *foliosum* has never given an offset and only one bulbil from which, however, other bulbils and offsets have, from time to time, been obtained.

POLYSTICHUM ANGULARE LYELLII (LOWE).

This neat and distinct variety has been scarce for many years—so much so that it is not certain whether it is still in cultivation. It was raised by the late Dr. Lyell of Newburgh, Fife, and sent out, I think, by Messrs. Edward Sang & Sons, of Kirkcaldy. It is described in Lowe's British Ferns (1891) as "a fine congested form, crisped, and *occasionally closely branching at the apex*." I well remember the original plant as it was grown in the Todmorden nursery some sixty years ago, I think. It had the size and general habit of *parvissimum*, Moore, but instead of having the perfectly flat fronds of that variety it was curly and crispate, but did not "branch at the apex" nor anywhere else. The description "branching at the apex" has crept into catalogues of late years and a plant has been sent out having this character. The plants I have seen of this type, however, in my opinion, are not the true Lyellii. They are not so dwarf, are less curly and not nearly so neat in habit as the original Lyellii. The latter was presumably raised from *parvissimum*, though I have no certain information on this point, but the two closely correspond in size and in general character except for the curly appearance of *Lyellii*. I have myself raised many crops of

seedlings from *parvissimum*, all of which came remarkably true to type, but nothing like *Lyellii* has appeared among them. On a visit to Mr. Robert Bolton last autumn I noticed some seedling *congestums* (a few only) which seemed to me to resemble *Lyellii*, having the densely congested character along with a certain amount of curliness and without any branching at the apex. Mr. Bolton kindly gave me one of these and I am taking the greatest care of it. The new fronds of this year are of the same general character, though some are more curly than others, and I am hoping that it may turn out to be the true *Lyellii*. Mr. Bolton told me that the parent of these ferns came to him from Sale quite thirty years ago, but he was not sure what name it bore when received. F.W.S.

ASPLENIUM VIRIDE ALPINUM.

This " botanical " variety of the green spleenwort is so far unknown as a British fern, but has been recorded from the Alps and from the mountains of Corsica. My own knowledge of it was first derived from " Prodrome de la Flore Corse," a copy of which was kindly sent to me from the Botanical Gardens of Geneva, of which the author of the Flora, Dr. John Briquet, was formerly director. It is referred to as having been described in 1857 by Schleicher and afterwards by Dr. Christ in 1903. Its habitat is given as crystalline rocks of the highest summits, mainly those of Monte Carlo and Monte Rotondo, but also found by Dr. Briquet, in 1906, at Caps al Berdato on moist rocks facing east at 2,400-2,500 metres. The description is " plant dwarf, height 3 to 5 centimetres ; fronds often spreading, having 6 to 10 pairs of pinnae, these being small or medium sized, very serrate, overlapping at the edges. *Race calcifuge*, rare in the chain of continental Alps." M. Kestner, on seeing the photograph of Mr. Greenfield's *viride plumosum*, suggested that it might be a form of *alpinum* to which it seems to conform in habit and general character, but Mr. Greenfield is pretty confident

that the place where it was found, near Kandersteg, was on limestone rocks and is quite sure that the general geological formation of the region was limestone, which does not agree with the description of *alpinum* as "calcifuge." It happens sometimes, however, that plants stray away from their proper geological habitat, though it is certainly commoner for lime-lovers to occur off the lime than for lime haters to stray into a limestone district. It is also possible that *alpinum* may not be so exclusively calcifuge as has been supposed. It would be interesting to discover whether the true *alpinum* does, or does not, actually occur in the Kandersteg region, either on or off the limestone formation.

FERNS NEAR BOURNEMOUTH.

There could hardly be any more incongruous situation in which to think and write about Ferns than my present one in mid-May on a sunny beach on the South coast ; but it was only yesterday that, while rambling about some sand dunes, a fair-sized cluster of willows was observed and inspected, and an alder-swamp discovered, with here and there a small but vigorous *Osmunda* sending up those curious tea-coloured fronds, while *L. dilatata* was in abundance on the tufts of coarse grass that formed little island-footholds and which made one think of *L. cristata* hopefully but vainly : these seemed in fact to be the only two species, but one at least was a welcome surprise. Just before leaving home a last look was taken at some dishes of prothallia, mostly of *Osmunda* spores sown about twelve months ago and obtained from plants grown in a conservatory ; there had been any number of prothallia for a long time, but this almost perfunctory look disclosed a good many out-growths which, one hopes, are first fronds at last : long stems slightly widened at the point, rather like attenuated spatulas. Correspondence a few years ago with the Editor produced the opinion that *Osmunda* is

easy and quite quick to raise, so perhaps the indoor life of the plants may be the cause of this slow development : or it may have been hindered by a thick growth of moss which has had to be allowed to flourish with the prothallia.

The news has just come from the Editor of M. Kestner's death, which we can only regret. The articles from him were not merely interesting, but (as he himself wished) provocative —of thought, and one had begun to hope of replies as well : now one can but trust that the study of hybrids will continue and become a definite branch of fern raising and growing. The Editor has been busy with *L. Boydii*, and the present writer has so far been very successful with this fern and hopes to have some for disposal soon : and he has one question to ask, which is : What points should be looked for in a fern which is supposed to be a hybrid ? *Boydii*, for instance, is not a variety in the usual fern sense : that is, it is not crested, or plumose, or a divisilobe : but what takes it out of the class of " forms " into that of hybrids ? And the same applies to *L. cristata* ; and then again *L. paleacea* is not admitted by everyone to be a species, but is at best a " sub-species " and, to some minds, a " form " only : though there are impenitents who cannot see why so distinct a fern cannot be a species.

But reverting to spores, the writer hopes to have a few *L. æmula cristata* to give away next autumn. These were sown from a frond kindly sent by the Editor last year and have produced a fair crop of first fronds. So far the crested character does not show, but the appearance even now is unusual and promises well for the future. An attempt to raise *L. dilatata foliosa cristata* (the " Azores " form) has as yet only resulted in two large dark green prothallia which seem incapable of proceeding to the next stage, though every opportunity and inducement will be given them to do so.

E. A. ELLIOT.

LASTREA DILATATA GRANDICEPS, KIRBY.

As recorded in The Gazette, Vol. VI., No. 3, p. 58, we received, in 1930, fronds of a ramo-cristate *Lastrea* found by Mr. Alfred Kirby, then of Cardiff, in that neighbourhood. He supposed it to be a form of *L. æmula* mainly, we think, because that species was prevalent around. As the plant was very small and the scales not developed, we were uncertain whether it would turn out to be *æmula* or *dilatata*. Mr. Kirby afterwards sent a division of the plant, but it was not until 1935 that it could be distinctly recognised as *dilatata* and even then it had, and still has, some characteristics suggestive of *æmula* parentage, such as the concave pinnules which caused that species to be named *Aspidium recurvum* by Bree, although Babington's name of *concavum*, provisionally used by Newman, certainly describes its character more accurately. This year the plant, which has separated into several crowns is in some respects more *dilatata*-like than *dilatata* itself. The scales of the stipes are large and conspicuous, and the central dark median line is wider and darker than in *dilatata* as usually seen, i.e., the dark part of the scale is not only blacker than usual, but has spread so as to occupy the greater part of the scale, leaving only a lateral margin of paler brown. It is really a *ramo-grandiceps* form, but the dark hue of the scales suffices to distinguish it at once from Barnes's *dilatata grandiceps*, which is the only form with which it might otherwise be confused. Mr. Kirby's letter, sent with the little fern, is worthy of being reproduced or, at least, quoted :—

" Dear Sir,

" As promised, I send you a division of the little fern which I found, some time ago, on the Little Garth. I have an impression that it is *L. æmula*. I hope it is, as the species has varied so little, but time will tell. I have a fine specimen of *L. dilatata*, crested, but the two plants seem quite distinct. On the Little Garth there are some of both species, but they are not numerous. In my rambles in Glamorganshire during the last twenty years I have seen great numbers of both

species and whenever I found them I have examined them closely, but never found any variation. The plant I send you cannot be from a stray spore in my collection because it was a *plant* when found. It is a pity that more people, interested in British ferns, do not know of the existence of the British Pteridological Society. I have known several men who have made finds of considerable value, but in all cases the ferns have perished through the finders not having suitable conditions in which to grow them. One acquaintance of mine found a plant of which I sent a frond to the late Mr. Druery, who called it *Scol. v. stenomenon*, and said it was the first time it had been found wild although it had been previously produced under cultivation. This was a single plant at the time, growing among nettles a few miles from Cardiff. Fifteen years later another friend found another plant at the same place, but both men lost their finds. Had these men got into touch with the Fern Society they might have been saved. I have known other cases of the same kind. Some years ago at the very top of the Little Garth, about 700 feet above sea-level, in swampy ground, I found a very fine plant of *Blechnum spicant*—a single plant—with many of the normal type growing near. It was a large plant with about 25 fronds, 8 or 9 inches long, both fronds and pinnae being wider than normal and the pinnae beautifully undulate ; it looked lovely in the mass, but I lost it afterwards, one of the prettiest finds I ever had. My ramo-cristate *Ceterach* was saved from extinction by the spores being distributed to several members of the Society, although only one, Mr. Askew, of Grange, was able to raise plants and grow them on.

" Yours sincerely,

" A. Kirby."

We regret to have lost touch with Mr. Kirby, letters to him having been returned marked " Gone away." We do not know whether he is still alive, but have not heard of his death. Last year was the first time we have been able to obtain spores of his latest find and some of these have now germinated so the variety will, we trust, not be lost. It is

possible that it may be a hybrid between *æmula* and *dilatata*, though it resembles the latter much more than the former species. It is certainly a curiosity to say the least, and the dark and shaggy scales give it a very distinct appearance among other ferns.

F.W.S.

FERN GOSSIP.

The winter and spring of 1935-6, although not unusually severe, have both been trying for ferns in this part of the world. November and December were unusually wet and this prevented both deciduous and evergreen ferns from taking their usual midwinter rest. January and February were mild and March was again a wet month. Since then we have had practically no rain to reach the roots of things, and April and May were too cold for much growth to be made. We have, however, escaped the disastrous frost which did so much damage in May, 1935. The result is that many ferns are coming up irregularly and defectively, and *Polystichums*, which showed plump and symmetrical crowns in the autumn, are, in many cases, sending up two or three fronds only instead of shapely shuttlecocks. *Scolopendriums* have fared worse than *Polystichums*, but are now (June) making growth and I hope many of them will recover. A curious thing happened to a large pan of *Cystopteris montana*, of British origin, which was left out of doors all the winter and consequently exposed to all the wet of December and March. The result was that all the rhizomes rotted with the exception of a tiny fragment which somehow escaped, like " the holy Archbishop Dunstan, who alone was stayed on a beam " when the house fell. A plant from Switzerland, however, also left outside but in a smaller pot, was practically uninjured, probably because the smaller body of soil in the pot kept it comparatively dry during the resting season. The moral is, keep Alpine ferns like other Alpine plants, on the dry side through the winter and until the time comes for them to grow.

Another Alpine fern is *Asplenium viride*, which my good friend, M. Kestner, advised me to keep "in an ice box" through the winter to prevent it from growing before the proper time. I have more than once lost the normal form, but have managed to preserve the plumose form because it was kept on a dry shelf in the (cold) greenhouse with a bell glass over it. It did, however, sometimes start into growth before the weather was fit and suffered somewhat in consequence, but I hope it is safe for the present, although still quite a tiny plant. I have never sown spores of *viride*, although M. Kestner sent me, last autumn, some fertile fronds of a deeply serrate form brought from the neighbourhood where Mr. Oberholzer found his plumose *viride*. The latter, of which M. Kestner kindly sent me a photograph, is quite different from Mr. Greenfield's plant and grows much larger as it was found at a lower altitude and has less of the alpine in its constitution. Dr. de Tavel has kindly promised to try to send me a plant of *A. viride alpinum* if he can procure it, and I am anxious to see this and to compare it with Mr. Greenfield's *plumosum*, which seems to be probably a variant of it.

Polypodium dryopteris "*plumosum*," which is really a crispate-foliose form, requires to be carefully watched under cultivation or it will, in a few seasons, apparently change to the normal form. It is not that the fern really changes, but it sows itself abundantly and the spores produce a large proportion of the normal form which quickly chokes out the variety unless the seedlings are removed. Of course, *some* of the seedlings are of the true varietal form and I have again and again picked out specially promising ones only to find that the best were no better than the parent plant.

P. angulare flabellipinnulum, Wills, seems to have made up its mind what to do and has settled down into a permanent and constant form. This fern was originally named *cristi-pinnulum* by the finder, who thought the pinnules were crested although both fronds and pinnae had plain tips.

Mr. Wollaston and Colonel Jones, however, disagreed with this view and Dr. Wills eventually came over to their opinion and adopted Wollaston's name, *flabellipinnulum* (fan-shaped pinnules). For twenty years or more this fern was of uncertain mind and certain individuals would change—first a frond and then the whole plant—into a rather inferior type of acutilobe and, with me, these were always quickly discarded. One plant, however, has remained constant and this is now a fine specimen with fronds nearly 3 feet long, although, at first, the variety was rather a dwarf. Last year I thought its spores ought to be sown, but I was only able to find a very few imperfect sori, so I failed to sow it. This year the plant is finer than ever, but has *no spores at all* upon it. I hope, however, that, in a more favourable season, it may again be fertile and reproduce the corrected and permanent type.

I have carefully watched, this year, the behaviour of *Lastrea Boydii* (*dilatata* × *paleacea*) and was struck by the extremely shaggy stipes and rachis and also by the peculiarly elongated shepherd's crook type of the frond while unfurling. Both these characters are relied upon by Wollaston as distinguishing the Chaffy Male Fern from the ordinary type of *filix-mas*.

I regret to say that disaster has come to Dr. Rowlands's Welsh find of a form of *Adiantum capillus-Veneris* in 1934 (Gazette, Vol. VI, pp. 271 and 272). It seemed likely to resemble the variety *imbricatum*, but *might* have been even better. It came through the usually most trying winter months of the past season and was beginning to grow about the end of March. When the cold and dry April came in, not having a heated house I handed it over to the care of a neighbouring nurseryman and it was put into a warm house —too warm, I fear, for on going to see it in June it was apparently dead ; no fronds were visible, nor other sign of life. On shaking it out and examining the roots, one or two tips were found to be apparently alive and the foreman thought it should be repotted and given another chance. This was

done and it will be carefully watched, but I fear there is little hope for it. It had previously had a " setback " during a particularly hot day last summer and had not much reserve energy upon which to fall back.

Lastrea Dolomitica, Christ, of which M. Kestner sent us fronds in 1934 and a small living plant last year, is said to have been found by Mr. G. Capelle, a chemist of Springe, Hanover, who told Dr. de Tavel that he found it in an abandoned Dolomite quarry on Mount Deister, a spur of the Teutoburger Wald, Hanover. The name " *Dolomitica*," therefore refers to its geological and not to its geographical origin. The plant resembled a dwarf form of *filix-mas*, but the fronds had a peculiarly lustreless surface. I raised a crop of plants from the fronds sent, but could not see that they differed in any way from seedlings of normal *filix-mas*. The plant sent, however, retains its dwarf character and dull surface. As soon as the little plant produces spores I hope to sow it again.

Lastrea æmula cristata, Gill, has a disconcerting habit of throwing up irregular and defective fronds, but sometimes a frond is sent up which is quite regular and these generally have the pinnules crested as well as the pinnae and fronds. I have a small batch of seedlings coming on which look very promising and I hope to be able to select one or more which will be thoroughly symmetrical as well as percristate.

F.W.S.

" JOYS OF THE GARDEN."*

Canon Kingsmill's book reaches us just at the moment of going to press. It is a book for any lover of the outdoor garden, for almost every class of plant that can be grown successfully in the open air in our climate has been treated of in the twelve chapters describing the " Joys of the Garden." There is nothing said about expensive orchids, or stove plants,

* " Joys of the Garden," H. Kingsmill Moore, D.D., F.L.S. 3/6 (Talbot Press, Dublin and Cork.)

or forced fruits, but from the first of January to the end of December we are treated to a succession of beautiful flowers, foliage plants and ferns in what is almost an ideal climate in these islands. In January there are Snowdrops, Winter Aconites, Irises, Crocuses. In February all these are continued and are joined by Snowflakes and early-flowering shrubs. In March we get Scillas, Chionodoxa, early Daffodils and Magnolias. April brings us more Daffodils, Anemones, Fritillarias and the first (Alpine) bearded Irises. May is pre-eminently the month of flowering trees, Apple, Cherry, Lilac, Hawthorn, Laburnam and Rhododendrons, while the early Tulips light up the borders and the second series of bearded Irises show their bright colours. June is the month when the tall bearded Irises are at their best as well as many of the beardless species. The " Queen of Flowers," the Rose, also begins her reign of beauty, ramblers, climbers, teas and other beauties competing with each other. Alpine plants in the rock garden are also at their best and constitute a garden in themselves. They continue also into July and the roses increase in luxuriance and beauty, and the earlier ferns show their best character. Rock gardens can be planted with Alpines which will establish themselves before winter ready for the following season. This is a good time for taking cuttings and making layers of choice herbaceous plants, which are otherwise difficult of increase. August is the month for our native ferns, for many of them are at their best and even the latest growers, the Polypodies, are developing and showing character. The fresh green of the ferns is a relief, especially at a show, from the glare of brilliantly coloured flowers which, after a time, becomes fatiguing to the eyes.

Canon Moore is a real lover of British Ferns and the climate of the Emerald Isle suits them perhaps better than any other in the world, although closely rivalled by that of Devon and Cornwall and the West of Scotland. August is also the month for planting Daffodils and many other bulbous plants,

though it is, as yet, too early for Tulips and desert Irises. In August and September most ferns can be replanted and divided with advantage and with the minimum risk of injury and loss—they have time to become re-established before the winter comes. The same thing applies to the inhabitants of the herbaceous border, speaking generally, although the bearded Irises are best dealt with in June or early July, as soon as they have finished flowering. October and November are the months for transplanting trees and shrubs. November is the time when Chrysanthemums are at the top of their form and many of them can be propagated by cuttings from side shoots. Berried shrubs ripen their fruits and others develop the bright colours of their autumn leaves.

December is the month when life is most dormant in our country, but the rest is more apparent than real for, though little growth is visible, yet flowers, ferns and shrubs are all hard at work under ground making new roots and developing buds both under and above ground. Growth is not, however, suspended even above ground and quite a number of things may be found in flower. Familiar examples are the Christmas Rose or Black Hellebore, the golden winter Jasmine, and the Cicilian Snowdrop. Canon Moore mentions also Arum Italicum and Iris stylosa, to which may be added the sweetly scented *Viburnum fragrans* which flowers at any time from October to April so long as it is not prevented by hard frost. The many varieties of the common Ivy are at their best in December, though their beauty is of the leaves and not of the flowers. In short, there are " Joys of the Garden " in every month of the year.

Canon Moore's modest little book is eminently calculated to awaken and develop a love of the garden in those who have only a nodding acquaintance with it, while there are many valuable hints to be picked up in special subjects, even by the expert, for we cannot all be experts on every subject even in gardening.

THE BRITISH PTERIDOLOGICAL SOCIETY

THE SOCIETY originated, in September 1891, in the Lake District with headquarters at Kendal. Its members were, however, distributed throughout Great Britain and Ireland, whilst some few reside in the Dominions and U.S.A. Its declared objects were :—

(i) The Study of Species and Varieties of British Ferns ;

(ii) The Recording of Information with regard to Ferns generally.

The British Fern Gazette was established in September 1909, publication being quarterly until the commencement of the war. After the war publication was restricted to two issues per annum on account of the increased cost of printing and the decrease in the number of members. It is hoped shortly to resume quarterly publication.

Members are invited to communicate with the Hon. Secretary on subjects of interest with regard to British Ferns.

Certificates are awarded to new ferns of distinction of which plants or characteristic fronds are shown at the Annual Meeting for adjudication. The Annual Meeting is held usually in August or September, at some place where ferns are abundant and from which excursions for fern hunting can conveniently be arranged. These excursions are an important feature of the Society's activity.

Fronds may be sent to the Hon. Secretary to be identified or named at any time.

Recently a Sub-Committee of the Society undertook the correct naming of the National Collection at Kew and, in conference with the Director and staff, planned and arranged the present fernery, supplementing the collection with gifts of plants from the ferneries of some of the members.

The collection in the Royal Horticultural Society's Garden at Wisley was similarly dealt with and augmented.

The Society is affiliated to the Royal Horticultural Society, which is also an individual subscriber to its funds.

The Committee is endeavouring to increase the membership of the Society and, through this and by other means, to encourage the more general cultivation of the varieties of British ferns. Any lover of horticulture is eligible for membership and the subscription is 10s. per annum (due in advance at or immediately after the Annual Meeting), which entitles members to copies of *The Gazette*.

The Hon. Treasurer or Hon. Secretary will be pleased to supply members who may desire it with Bankers' Orders for the convenient payment of subscriptions.

Further particulars may be obtained from the Hon. Secretary,

F. W. STANSFIELD, M.D., F.L.S.,
120, Oxford Road,
Reading,
Berks.

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VOL. VII. No. 3.

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EDITED BY

F. W. STANSFIELD, M.D., F.L.S.

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THE BRITISH PTERIDOLOGICAL SOCIETY

President: *Mr. W. B. Cranfield, F.R.H.S., V.M.H., F.L.S., East Lodge, Enfield Chase, Middlesex.*

Hon. Secretary: *Dr. F. W. Stansfield.*

Hon. Treasurer: *Mr. J. J. Sheldon, F.L.S., "Monkhams," Lower Road, Great Bookham, Surrey.*

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Asplenium trichomanes bipinnatum, Roberts.

THE

BRITISH FERN GAZETTE.

NEW SERIES.

VOL. VII. DECEMBER, 1936. No. 3

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EDITORIAL NOTES.

Two new members were elected at the Annual Meeting and their names will be found in the report of that function. The name of Mr. John Brookfield, of Southport, was inadvertently omitted, but his name has been placed on the roll of members with the rest and he will no doubt be formally elected at the first opportunity. Other new members who have joined the Society since the meeting are :—

Mr. Alfred Gordon, The Elms, Ringmer, Sussex ;

Messrs. G. Jackman & Son, The Nurseries, Woking, Surrey ;

Major-General Sir Alfred Knox, K.C.B., C.M.G., M.P., Binfield House, Binfield, Berks ;

Miss Irene Manton, B.A., Ph.D., Lecturer on Botany in the Victoria University, Manchester ; and

Miss Jean Taylor, Lily Hill Nursery, Bracknell, Berks.

The names of all these ladies and gentlemen have been placed on the roll of members and they will come up for formal election at the next meeting.

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Dr. Irene Manton is engaged in investigating the cytology of a number of ferns, especially those of hybrid (or supposed hybrid) origin and primarily the *Lastreas—remota*, *subalpina* and Boydii. She reports, *ad interim*, that these show no differences on cytological examination and are not to be distinguished from each other by this method. As the ferns are quite distinct morphologically it is to be presumed that their differences are in the intimate structure of the chromosomes rather than in the numbers of the latter.

Miss Taylor is the daughter of Mr. J. R. Taylor and is taking charge of the ferns in his nursery.

Messrs. Jackman & Son, a well-known firm, intimate that they propose to take up the commercial cultivation of hardy ferns.

Mr. Reginald Kaye, of Silverdale (already a member of the Society) also proposes to make fern-growing a part of his business.

All these recruits are valuable acquisitions to the Society, but we still require more to make good the losses, from death and other causes, in recent years.

From our valued member, Dr. de Tavel, of Bern, we learn that he has recently given a lecture, before the Swiss Botanical Society, on the varieties of *Polypodium vulgare*. In Germany and Switzerland about eighty forms have been described which Dr. de Tavel divides among three sub-species, the latter being based upon the number of furcations of the veins of the pinnæ. The lecture has not yet been printed, but we are promised a copy later and hope to publish it in a future number.

OUR FRONTISPIECE.

Asplenium trichomanes bipinnatum, Roberts.

The frond shown in our illustration was from a plant grown by Mr. Robert Bolton, one of a batch raised by Mr. Henwood and sent to Mr. Bolton in a small state. The original plant

was found by Mr. Ellis Roberts in N. Wales and by him seedlings were distributed. My first acquaintance with it was the sight of a frond sent to Mr. Druery by Mr. E. J. Lowe with the suggestion that it might be a hybrid between *trichomanes* and *Athyrium filix-fœmina*, though there was nothing in its appearance to suggest the latter species beyond its size which was the largest to which I have ever seen any plant of *trichomanes* grown. So far as I remember, it was 16 or 18 inches long and 5 or 6 inches wide and thoroughly bipinnate throughout. I at once declined to accept the theory of hybridity, while admitting that the size of the specimen gave some excuse for the suggestion. Shortly afterwards I paid a visit to my brother at Sale and found that he had a large batch of seedlings of what was evidently the same fern although his plants were much smaller and only showed the bipinnate character here and there, though the pinnæ throughout were longer than normal. I have, myself, never been able to grow the plant to anything like the size of Mr. Lowe's frond, though I have had a plant for some years (given to me originally by the late George Whitwell) which has kept the bipinnate character constantly since I had it. I have raised several batches of seedlings from this plant, but have never been able to get a plant to grow to the size of either Lowe's or Bolton's plants. Many of the seedlings are not bipinnate throughout though practically all have elongated pinnæ, some of which show the bipinnate character more or less. Mr. Sheldon has grown some fine specimens of thoroughly bipinnate character, but Mr. Bolton has shown us all "how to do it." It is a matter of liberal culture from the start, the young plants being grown on from the seed pan without a check of any kind. Even then probably not all attain to the giant character, but some of them do. Mr. Bolton, I think, had a plant in good character in his winning group at Southport this year.

F.W.S.

THE ANNUAL MEETING.

The Forty-first Annual Meeting of the Society was held at the Town Hall, Southport, on August 27th, 1936, the President, Mr. W. B. Cranfield, occupying the Chair.

Members present were :—

Mr. W. B. Cranfield, F.L.S. (President) ;

Mr. Alexander Cowan (Vice-President) ;

Mr. T. B. Blow, F.L.S. (Vice-President) ;

Mr. Robert Bolton, F.R.H.S. ;

Mr. J. Dargue Dixon ;

Mr. P. Greenfield ;

Mr. A. J. Macself ;

Mr. R. Whiteside ; and

Dr. F. W. Stansfield (Hon. Secretary).

The President welcomed the members to Southport and congratulated the Society and the Southport Corporation on the splendid exhibition of plants, flowers and fruits generally and of hardy ferns in particular. Of the latter, the exhibition was considered to be the best ever held in Southport or elsewhere in the provinces, to say the least.

The Minutes of the last Annual Meeting at Totnes on July 3rd, 1935, as also those of the Special General Meeting held in the Town Hall, Southport, on August 29th, 1935, were read, confirmed, and signed by the President.

The Hon. Secretary read his report as follows :—

" Mr. President, Ladies and Gentlemen,

The present season has been more favourable to the growth of ferns than have the last two or three. The spring was dry and cold, and ferns were late in starting, but June and July brought warmer weather and more moisture so that things started into growth and were not subjected to a cutting check such as was caused by the severe frost in mid-May of

last year (1935). Ferns generally are looking very well and a well-kept garden is a pleasure to the owner and to his friends and visitors. Vermin has been less rampant than usual—the unpleasant white fly, *Typhlocybe*, but little in evidence, and the still more deadly *Otiorrhynchus* has been but little seen so far as my garden is concerned, though I have hunted for it regularly after dark as usual.

The Society has lost a number of valuable and distinguished members by death, as recorded in the GAZETTE, viz., Mr. Lindsay Bury, J.P., Mr. Frank Butler, Mr. Francis Ransom, F.C.S., Mr. Michael Stephens, Mrs. Taylor of Mold, and Lord Wakehurst of Ardingly. Also, quite recently, Mr. C. W. Coward, of Grasmere, a new member who showed great enthusiasm for ferns and interest in the work of the Society. His death, at the early age of 38, was due to the injuries he received in the Great War. His mother, Mrs. Coward, sent a special subscription of £1 as a memento of the pleasure her son had received from his association with the Society. Another loss, though not through death, is that of Canon E. H. Hawkins, of Bisley, Stroud, a Vice-President of the Society and a staunch and faithful supporter for many years, who has been compelled, by failing health and consequent inability to "follow his ferns," to resign his membership. Mr. A. Pickard, formerly of Wakefield, but more recently of Watford, Herts, is reported to have died "over a year ago." Three ladies have joined the Society during the year, namely, Mrs. Deborah Brown, of Donaghadee, Mrs. Robert Bolton, of Birdbrook, and Mrs. Thorrington, of Little Baddow, Essex. One or two members have been lost sight of or have lapsed through non-payment and we are left with 96 paying (or paid-up) members and 8 honorary members. Considering the wide distribution of our membership, this seems rather a scanty number and we are in need of new blood and especially of young blood.

Of wild finds during the season the Staverton *Polypody* found, after the last Annual Meeting, by Mr. Henwood,

Mr. Thorrington and others, turns out to be quite a good variety though it has not yet attained to its full development. It is on the lines of *omnilacerum superbum*, but is dwarfer and more compact in habit. Mr. Greenfield found, later in the season, a promising form of *Polys. aculeatum* in the Isle of Wight. It was much punished by the dry season of last year and, though it has partly recovered and is now safe, it needs further time for development before its final form can be determined. During the present year Dr. Lawn, of Guildford, not a member of the Society, found a very fine plumose form of *P. angulare* in the Island of Guernsey. Although a botanist, Dr. Lawn is not a fern specialist and so did not collect the plant but gathered a frond which he sent to be identified. I have the specimen here for you to see for yourselves. I hope the finder may have another opportunity to collect and cultivate the plant so that it may not be lost to posterity.

As a result, mainly, of the activity of Mr. Macself, a perpetual challenge cup has been subscribed for and purchased by members of the Society, to be awarded each year to the winner of the first prize for the group of British ferns arranged for effect at the Southport Show, to be held by him for one year and then again competed for. It is desirable that further subscriptions should be raised if possible in order that the winner's name may be engraved on the cup and that a small replica may be given to the winner each year on giving up the cup.

Mrs. Smithies, of Kendal, has sent the Society a present of books from her husband's library, comprising most of his fern books and a few back numbers of the GAZETTE, some of which, I hope, will fill gaps in the series of members who lack them."

F. W. STANSFIELD.

In the absence of the Treasurer, Mr. Sheldon, his balance sheet and statement were read by the Hon. Secretary as follows :—

BALANCE SHEET.

Receipts.	£	s.	d.	Expenditure.	£	s.	d.
Balance from last year	57	14	5	Expenses of Annual Meeting, 1935 ...	3	10	0
Subscriptions ...	43	15	6	Affiliation Fee, R.H.S.	2	2	0
Sale of Gazettes ...		9	0	Gazette, June, 1935	17	3	6
Advertisement ...	2	2	0	,, Dec., 1935	21	11	4
Blocks for Gazette (M. Kestner)	1	13	8	,, June, 1936	15	7	0
Donation—Mrs. Coward	1	1	0	Postages, 1935 ...	4	8	6
				,, 1936 ...	3	16	5
				Printing Circulars ...		5	3
				Balance at Bank ...	38	11	7
	£106	15	7		£106	15	7

Audited and found correct, August 25th, 1936.

(Signed) Percy Greenfield,
Hon. Auditor.

It was proposed by the President, seconded by Mr. T. B. Blow, and carried :—" That the Secretary's and Treasurer's Reports be received and adopted."

ELECTION OF OFFICERS AND COMMITTEE.

Mr. W. B. Cranfield, F.R.H.S., F.L.S., was unanimously re-elected President on the proposition of Mr. Alex. Cowan, seconded by Mr. T. B. Blow.

Canon Hawkins, having resigned his membership, the remaining old Vice-Presidents were re-elected, as proposed by Dr. Stansfield and seconded by Mr. Macself.

Additional Vice-Presidents elected were :—

Mr. Robert Bolton, F.R.H.S., proposed by the President and seconded by Mr. Macself.

Mr. J. A. Sinclair, proposed by Mr. T. B. Blow and seconded by Dr. F. W. Stansfield.

The complete list is therefore now :—Mr. T. B. Blow, F.L.S., Mr. Alex. Cowan, Mr. F. J. Hanbury, F.L.S., Mr. T. E. Henwood, Rev. Canon Kingsmill Moore, D.D., F.L.S.,

Professor Weiss, D.Sc., F.R.S., F.L.S., Mr. Robert Bolton, F.R.H.S., Mr. Jas. A. Sinclair.

Mr. J. J. Sheldon, F.L.S., was re-elected Hon. Treasurer, on the proposition of Mr. R. Bolton, seconded by Mr. Whiteside.

Dr. F. W. Stansfield was re-elected Hon. Secretary and Editor of the GAZETTE, on the proposition of the President, seconded by Mr. Macself.

Mr. P. Greenfield was re-elected Auditor, on the proposition of Mr. Macself, seconded by Mr. Whiteside.

The remaining members of the old Committee were re-elected with the addition of Mr. Thomas Bolton, Mr. Joseph Lloyd and Mr. J. Dargue Dixon, on the proposition of the President, seconded by Dr. F. W. Stansfield, the new list being therefore :—Rev. E. A. Elliot, M.A., Mr. A. J. Macself, Dr. S. P. Rowlands, M.B., Dr. T. Stansfield, M.B., Mr. F. W. Thorrington, Mr. R. Whiteside, Mr. J. Dargue Dixon, Mr. Joseph Lloyd and Mr. Thomas Bolton, F.R.H.S.

NEW MEMBERS OF THE SOCIETY.

Mr. Frederick Grotrian, of Branksome Dene, Westbourne, Bournemouth, proposed by Mr. T. B. Blow, seconded by Dr. F. W. Stansfield.

Mr. Ernest Wilding, of Wexham Place, Stoke Poges, proposed by the President, seconded by Dr. Stansfield.

Both gentlemen were duly elected.

Rev. Canon E. H. Hawkins, M.A., was elected an Hon. Member on the proposition of Mr. Greenfield, seconded by Dr. F. W. Stansfield.

The President suggested that the Society as a whole should endeavour to arrange a composite exhibit of British ferns in London under the ægis of the R.H.S.

It was resolved, on the proposition of Dr. Stansfield, seconded by Mr. R. Bolton :—"That the next Annual Meeting be held at Chideock, Dorset, on July 19th, 1937."

A vote of thanks to the Southport Corporation for the use of the Committee Room for the meeting was carried unanimously.

Dr. Stansfield showed a series of fronds from his own garden and that of Mr. Henwood. The collection included a fine form of *P. ang. divisilobum* found at Sidmouth as a small plant by Mr. Henwood in 1934, *P. ang. pulcherrimum variegatum*, Moly, *Lastrea montana plumosa*, F.W.S., *Polypodium v. plumosum*, Whilharris, *P. v. Cambricum*, C. Henwood, *P. ang. multilobum* (Sidmouth), T.E.H., *Blechnum sp. serratum*, Smithies (seedling from Aireys No. 2), etc.

The meeting concluded with a cordial vote of thanks to the President for his conduct in the Chair.

An exhibit of fronds had been sent by Canon Kingsmill Moore, but unfortunately they did not arrive in time for the meeting (although posted in due time). They were posted on to Reading and received by the Hon. Secretary on his return home a week or so later from Mr. Macself, to whom the packet had gone in the meantime.

The fronds sent were all well-grown examples of their kinds and consisted of several very good *angulare divisilobes* resembling the *venustum* exhibited by Canon Moore some years ago and others which have been raised from it. Another was a *falcato-pinnulum* similar to those which have been raised by the late H. Stansfield and Mr. Cranfield from Moly's *divisilobum falcatum*. There was also a frond from a self-sown *Polypodium vulgare* seedling in the way of *pulcherrimum*, Atkinson. The best of all was a sub-pinnate and plumose variety of *Scol. vulgare*. Others of this type have been raised by Messrs. Perry, the late H. Stansfield and Mr. Sheldon from *laceratum* × *crispum fimbriatum*, but we do not remember one in which the approach to a pinnate character was so remarkable. Of course, this may have been a specially good frond, but the strain is well worthy of perpetuation and further elaboration. We hope Canon Moore may be able to do this and his example may well be followed by others who have plants of this character.

THE EXCURSIONS.

After the Meeting at Southport a small number of the members travelled to Dolgelley, N. Wales, for a fern-hunting expedition, but naturally the Southport exhibitors were mostly unable to join in this, being detained at Southport until the finish of the Show. Some half dozen members and friends, however, turned up at Dolgelley, where comfortable quarters were found at the Golden Lion Royal Hotel. On the day of our arrival we came across a colony of a multifid or crested form of *Asplenium trichomanes*, the plants varying in character from mere *furcatums* to good multifid forms in some of which the terminal bunches amounted to crests, although none was found equal to the best-known *cristatums* such as Mrs. Rowlands's Devonshire find. Although we were not in a limestone country we found at least three colonies of this variation in localities considerable distances apart, in all cases growing in mortared walls, and we were all able to secure plants of what we thought the best forms. Another variety which seemed to be fairly widely distributed was *Blechnum sp. anomalum*, all quite good types of the variation. One plant only was found of a submarginate *Blechnum*, showing also a tendency to the *strictum* character. As it was quite a young plant it remains to be seen what it will turn out to be when fully developed. A curly (crispate) form of *Dryopteris filix-mas* was found, also a young plant not yet showing its full character. Quite a large number of species were found, over twenty in all, including *Asplenium lanceolatum*, *A. Adiantum-nigrum*, *Allosorus crispus*, *Blechnum spicant*, and, of species of *Dryopteris*, *dilatata*, *spinulosa*, *montana*, *filix-mas*, *paleacea* (*Borrerii*) and *propinqua*; *Ceterach officinarum* (rare), *Cystopteris fragilis*, *Hymenophyllum unilaterale*, *Polypodium vulgare*, *P. phegopteris* and *P. dryopteris* and *Scolopendrium vulgare* were all seen. The lime-lovers were all found on mortared walls and were all mostly small and sparsely distributed. *Scolopendrium* was the rarest of the lot, only one decent plant being seen with a few tiny seedlings all growing in the comparatively fresh

mortar of not very old walls. *Blechnum* was abundant by almost every roadside and *montana* was fairly frequently seen. Only two of the younger members of the party climbed to the top of Cader Idris, though all of us ranged over the lower slopes. The two pioneers saw plenty of *Allosorus* and the rest of the party saw it comparatively sparingly though fairly widely distributed.

The President and Hon. Secretary made two journeys to Dinas Mawddy, with other members, hoping to find again a large and very robust *Athyrium*, with stout and rigid footstalks, which they saw there in 1919, but were unable to collect on account of its large size and situation in the middle of a thick hedge. The landscape had changed somewhat since our previous visit and, though we searched diligently and *thought* we located the habitat approximately, the fern could not be found. We did find, however, a cruciate form of *Athyrium*—as a comparatively small plant, and brought it away. It is doubtful, however, whether it will be equal to the fine cruciate varieties already in cultivation. Probably the best thing found by way of the party was that by Mr. P. Greenfield who, with his son, Mr. H. F. Greenfield, went to the Snowdon district after the rest of the party had left and, while climbing on Tryfan, on a very foggy day, found a small plant of a crested *Blechnum* showing also traces of serration in the pinnæ. This also needs to be cultivated for a year or two before its final character can be made out. Fern-hunting does not consist of a continual succession of good "finds." These, however, when they do occur, are bright spots in life.

BRITISH FERNS AT SOUTHPORT SHOW, 1936.

The British ferns as shown at Southport this year were generally considered to form the finest exhibition of these plants ever brought together at Southport or elsewhere. Indeed, the only Show which could be compared with this was the R.H.S. International Exhibition at Chiswick in 1912,

when Mr. E. J. Lowe, the Bristol Zoological Society and other famous growers were competing. That was a very fine Show, but numerous choice varieties have arisen since that time and many of them were to be seen at Southport this year.

In Class 8, the " Group of Ferns to be arranged in a natural manner," there were six competitors, all of high quality, and the competition was very close indeed, in fact there was not one of them which was not good enough for the first prize had nothing better been shown. The first prize, which included possession of the Silver Challenge Trophy of the British Pteridological Society, was won by Messrs. R. Bolton and Son, of Birdbrook, whose group consisted of the very choicest things in the hardy fern world, all admirably grown, in perfect condition, and suitably disposed. · Such specimens have rarely been seen as the *Scolopendriums* in this group and even the smallest plants were, in many cases, of extreme rarity and great value, such as *Adiantum c. Veneris imbricatum*, *Asplenium trichomanes bipinnatum* and *A.t. incisum Clementii*. The second prize was awarded to Mr. C. W. Grubb, of Bolton-le-Sands, a comparatively new competitor, who had a splendidly grown and clean lot of plants admirably arranged, though he had not quite the same range of species and varieties as were in the first group.

Mr. Cranfield came in third with a really magnificent lot of very choice ferns, though they were perhaps not quite equal to those in some of his former exhibits.

Mr. Joseph Lloyd, of Southport, was fourth with a fine group of choice things in good condition, well arranged and including many rarities.

Two other exhibitors, Messrs. Lovelady and Brookfield, failed to obtain prizes, not because their groups were bad, for really they were very good indeed, but because the others were in some respects better. It was hard luck to be left out, but we cannot all be winners every time.

In the class for 12 British ferns, Messrs. Bolton were again first, Mr. Cranfield being second and Mr. Lovelady third.

In Class 10 (6 British ferns) Messrs. Bolton were first, Mr. Cranfield second, and Mr. Grubb third.

In Class 11 (6 normal species) Messrs. Bolton were first, Mr. Lloyd second and Mr. W. Law third.

For three *Scolopendriums*, Messrs. Bolton were first, Mr. Cranfield second and Mr. John Brookfield (Southport) third.

For three hardy *Polypodiums*, Messrs. Bolton were first, Mr. Lovelady second and Mr. Law third.

For three *Polystichums* and three *Athyriums* (two classes), the winners were Mr. Cranfield, Mr. Lovelady and Mr. Luckin in this order.

For six British ferns, Messrs. Bolton, Mr. Cranfield and Mr. Grubb came in first, second and third respectively.

For three British ferns the winners were Messrs. Bolton, Mr. Cranfield and Mr. Gandy (Southport) in this order.

For one British fern Messrs. Bolton, Mr. Cranfield and Mr. Askew were the successful competitors.

In some cases the competition was very close, but the splendid growth and character as well as the perfect condition of Messrs. Bolton's ferns made them triumphant in every class in which they exhibited.

NOTES ON THE LAKELAND FERNS.

In recent years little has been heard of the Lakeland ferns. This is probably due to the fact that fern hunters, those enthusiasts who search for natural variations among our British species, have concentrated their attentions on areas where the prevailing geological formations have encouraged an abundance of the calcicoles, or lime-loving ferns. Lakeland was at one time a popular hunting ground, and some of the pioneers of the cult lived there. The first volume of The British Fern Gazette contains a list of personal finds from the pen of Mr. G. Whitwell, who lived at Kendal. Dr. D. F. Clowes, of Windermere, and John A. Wilson, of Bowness, may also be mentioned. In June, 1910, Mr. C. T. Druery,

writing of the annual meeting, mentions that "for many years the meetings were held at Bowness, Windermere, but eventually it was thought desirable that other ferny localities should be visited." Kendal was made the centre for excursions in September, 1930, but during the intervening years South Devon and other places proved more attractive.

If, as is done by J. G. Baker in his "Flora of the English Lake District," the Lakeland area is extended so as to bite somewhat deeply into Westmorland, and to include certain limestone areas in Lancashire, then the total list of fern species is indeed a long one. Two typical calcicoles, *Lastrea rigida* and *Polypodium Robertianum*, occur on Whitbarrow, Hutton Roof and Arnside Knot, while *Polystichum aculeatum* and *Scolopendrium vulgare* are listed as frequent on the limestone. *Polystichum Lonchitis* has been found in several places, as usual at considerable elevations, as on Helvellyn. The common *Polypody* is more frequent in the limestone areas, but is quite common elsewhere. To find the Sea Spleenwort one must leave the hills and search along St. Bee's Head and about Whitehaven. But to the average person, the Lake District is mainly in Cumberland, and consists largely of slatey or, at any rate non-calcareous rocks, well wooded and well watered, with an extensive elevational range from almost sea-level up to 3,000 feet or more. It has, in consequence, an abundance of individual plants even if the geological characters limit the number of prevailing species.

The Lake District is such a fascinating area from the general holiday point of view that it is not easy to concentrate on fern hunting. From personal observation, therefore, one can only speak of the commoner plants likely to be met with during the usual excursions through woods, along streams and up the fells and mountains. Further information must be culled from the writings of others, with special reference to the County floras.

The Lady Fern will doubtless be the first to catch the eye, being everywhere common and usually very fine in its green

and red stemmed forms. The Floras state that the varieties *rhaeticum* and *molle* are frequent, and the hunter will notice many small variations such as sub-plumose forms. I myself have found a nicely crested form, but as this was growing within a mile of Mr. Askew's Fern Nursery at Grange, it may have originated from a wind-blown spore of a cultivated plant. Above Lodore was found a dwarf *Athyrium* with narrow pinnæ, incised pinnules and a habit of breaking up into numerous crowns. It is unfortunately not always quite regular. Dr. Stansfield comments that it resembles a form found by Mrs. Wilson, of Bowness, and called *stellatum*.

Lastrea filix-mas, in its three forms, is also very common, and ascends to well over 2,000 feet on some of the mountains. The Mountain Buckler, in spite of its name, although also plentiful, does not ascend to such high elevations, but is recorded for 1,500 feet on the Kirkstone Pass.

The Marsh Buckler only deserves mention as a rarity and I cannot find any recent record for it. The Floras give *Lastrea spinulosa* as not infrequent about Ullswater, Coniston, Windermere and Derwentwater. I personally have seen it only very occasionally. *Lastrea dilatata*, however, is everywhere common, up to nearly 3,000 feet on Helvellyn. The varieties *dumetorum* and *collina* are also recorded. Two interesting plants require mention. One, *Lastrea remota*, was found by Mr. F. Clowes, of Windermere, who apparently at first took it to be a form of *spinulosa*. Being later identified with *Aspidium remotum* (Braun), it was added to the British list as a new species. The evidence of its being a hybrid between *filix-mas* and *spinulosa* are now well known to fern students and need not be discussed here. The other is *Lastrea uliginosa*. Baker's " Lakeland Flora " mentions this as recorded by Lowe as growing with *Osmunda* in a wood on the west side of Derwentwater, and by Mr. Dickinson from Loweswater. If, as Lowe himself apparently believed, this is a form or hybrid of *Lastrea cristata*, it is not easy to account for the record, as I believe *cristata* has never been

found in the Lake District. I wonder if an herbarium specimen of this Lakeland *uliginosa* is still in existence ?

Lastrea aemula is apparently very rare and has not often been recorded. The Oak and Beech Ferns are a joy to behold in some of the damp woods and here, too, on moist rocks one is most likely to see *Hymenophyllum.* As is so often the case, old records confuse the two species, but I think it is now generally accepted that only *unilaterale* occurs, and that there is no reliable record for the occurrence of *Tunbridgense.* The Parsley Fern might be termed a dominant species in some places, common everywhere on the slate and ascending to the summits of Helvellyn and Skiddaw. My wife this year found an interesting and handsome form which is at present in Dr. Stansfield's care. It is distinctly more foliose than usual, and should it retain its characters under cultivation, will be a useful addition to a very short list of varieties.

Cystopteris fragilis is " common on the drier rocks and scars, much less common on the slate than among the limestone hills." Baker also states that a form approaching *alpina* was found on Saddleback by Mr. S. F. Gray.

Cystopteris montana is recorded as having been found by Mr. Bolton King in 1880, on rocks above Red Tarn, Helvellyn. Baker states : " Reported also from Langdale and Brotherswater, but I have not seen specimens." It would be interesting to know when this fern was last seen, and if still in existence. One does not associate this fern with anywhere but Scotland.

The Spleenworts are well represented. *Trichomanes, Ruta-muraria* and *Adiantum-nigrum* are frequent and need no special mention. An old record for *fontanum* is probably a mistake. But *septentrionale* has been found in numerous places in Borrowdale and the Vale of Newlands, Wastwater Screes, Honister Crags, Patterdale and elsewhere. Considering the predilections of this little fern and the abundance of slate rocks, this fact is hardly surprising, yet it must be termed rare. With regard to *Asplenium germanicum,* Baker states :

" Very rare. Has been found in Borrowdale by J. Flintoft and Miss Wright ; near Scawfell by Rev. W. H. Hawker ; on Skiddaw, Little Langdale and Barfe Fell." A plant was certainly seen recently in the latter locality and I am told that it still occurs in Borrowdale in one spot, but information about this plant is kept a close secret and is difficult to obtain.

Asplenium lanceolatum is another elusive fern, but it has been recorded from the Cumbrian side of the Duddon estuary near Millom by Rev. W. T. Baker. *Ophioglossum* and *Botrychium* both occur, the former in meadows, the latter on heathy pastures.

Osmunda regalis, once abundant around lakes such as Grasmere, Rydal Water and Derwentwater, has migrated, often unwillingly, into gardens and on to private estates. The high rainfall of the Lake District has, however, been kind to it, and one often sees some very fine specimens in captivity. Perhaps the same fate has followed *Polystichum angulare*, stated to be not infrequent in woods, as around Windermere. One saw some splendid specimens in gardens, but did not meet with it often in the wild state.

I was almost forgetting Cinderella, *Pteris Aquilina*, which is common in suitable places, ascending well up on to the hills. *Asplenium viride* is another fern nearly omitted. Most of the records are for the limestone areas, where it is not infrequent. But it also occurs elsewhere, as on the Honister Pass. A quarryman recently told me that it was formerly plentiful in that area, but a time came when the slate miners found a demand for it among visitors and residents alike. Interest has now died down, and perhaps this difficult little fern will have a better chance of surviving in its original home than in the gardens of the purchasers.

The Scaly Spleenwort was once also popular as a garden plant. It is seldom seen wild, though I have myself seen it at Grange and at Keswick, as usual an old walls.

From the above notes it will be seen that there is plenty of scope in Lakeland for the fern-hunting enthusiast, whether in search of species or variations. It is an area that would repay more intensive study. In any case, the ferns are so abundant and so finely developed that a holiday among them is always a pleasing experience.

A note of apology may be added for the use of the old nomenclature, but one's excuse is that it will not be misunderstood by anyone.

S. P. ROWLANDS.

LASTREA DILATATA GRANDICEPS, Kirby.

In June this year the Editor very kindly sent two lots of material of this interesting fern, thinking the scales might be of interest. This was certainly the case, as, to begin with, the first lot provided was from immature fronds and proved misleading when the second supply was examined. This rather negatives the idea that scales may be slightly useful towards identifying immature ferns ; and then, in sending the first lot, Dr. Stansfield suggested that the plant might eventually prove to be connected with *L. aemula*, an idea supported by features seen in the first scales looked at, but the more developed second lot gave no support to this view at all, and the only suggestion that seems possible—if there is really a connection with *aemula*—is that the similarity in scale features is found only in immature plants, or in some plants and not in others.

But there are certain differences between well-developed scales of this fern and those of *L. dilatata* species. Beginning at the base of the scale, this is deeply curved in *dilatata*, but only slightly hollowed out in the present variety. In the species the veins forming the stripe are darker, under the microscope, than in the variety. The species has " meshes " of an elongated diamond shape formed by the junction of the veins, while the variety has them rectangular and more narrow and elongate. The colourless veins of the species

bend outward and downward at the margin of the scale, but in the variety these veins run straight to the scale edge and end abruptly. Marginal glands and fringes are much the same in both cases ; the veining in the very long narrow apex was more like that of *aemula* than of *dilatata*. In the latter species the dark (stripe) veins appear to spring from a red-brown mass near or at the base ; in the variety the stripe begins suddenly without any marked point of origin.

The general conclusion reached is that the scales closely resemble those of *L. dilatata*, but show definite differences which are similar to those seen in the varieties, previously noted in THE GAZETTE, *lepidota*, *cristata* and *alpina fastigiata*, which suggests that these differences are due rather to varietal causes than to some connection with a species other than *L. dilatata*.

E. A. ELLIOT.

(Now that plants of Mr. Kirby's find have been grown to maturity the suggestion of *aemula* parentage is thoroughly dispelled. Not only are the scales of the rachis entirely different from those of *aemula*, but the general habit of the plant is that of *dilatata*. The crown is not clothed with erect " fuzzy " scales as in *aemula*, but the scales are closely adpressed to the base of the stipes ; also the crown does not tend to break up into a mass of confused offsets and the fronds, in dying down, drop from the base like *dilatata* instead of withering from the apex as in *aemula*. Finally, we learn, from Dr. Rowlands who knows the district well, that *aemula* is a rarity in that part of Wales and has not been recorded from the Little Garth at all. Nevertheless, the plant is a good and distinct find quite different from *grandiceps*, Barnes, which it most nearly resembles.—*Ed.*)

FERN GARDENS—COLLECTIONS OF FERNS.

A year ago the Rev. E. A. Elliot paid me a compliment by sending our Editor some comments upon what I had written for the previous issue of THE GAZETTE under the heading " Thoughts about Hardy Ferns." Among several remarks in that contribution which impressed me was the suggestion that our ferns might be made more appealing and attractive to those who are not pteridologists if planting schemes were planned with care equivalent to that bestowed upon the arrangement of a rock garden. These were not Mr. Elliot's

words, but I think he will agree I have not misinterpreted him, and immediately I read his article the greatness of its truth occupied my thoughts. Since then, whenever someone has expressed a wish to come and see my " Fern Garden," there has been an uncomfortable reaction in the back of my mind because, truth to tell, mine is not a fern garden but a collection of ferns, and the two terms are not synonymous.

We who make hardy ferns our special hobby develop the habit of striving to add continuously to the number of varieties and distinctive forms in our collections, and it becomes a question of finding space for a new acquisition where it will take no harm and so long as we see our choicest gems thriving we suppress any thought of improving spectacular effect lest it means some thinning out and reduction of numbers. Perhaps it is presumptive on my part to use the all-embracing " we " in this assertion, for maybe some of the members of this Society have command of space enabling them to distribute a comprehensive collection of varieties in a really artistic manner, thereby creating a fern garden to charm the eye as a spectacle as well as to delight the connoisseur, who will spend hours closely examining plants individually. Most of the fern enthusiasts I have been privileged to visit seem to be doing pretty much as myself, literally filling all the ground that can be spared with as many different ferns as it will hold.

There can be no doubt, however, that a garden cleverly designed and judiciously planted with colonies and patches of ferns in such a manner that their character and beauty were displayed to the full would compel such admiration that many would at once determine that they also must have fern gardens. Still, it would even then remain to be seen whether many of the quickly infatuated would become pteridologists, assuming the full meaning of the word to be " One steeped in love for ferns and versed in the Science thereof." There are some people who want whatever they see that is nice ; some who must go in for the latest vogue,

but lose interest so soon as another craze becomes a topic of conversation. Our fraternity wants the type of person who will enter into details concerning the differentiation of such terms as *acutilobum*, *divisilobum* and *pulcherrimum*, or *cristatum*, *polydactyla*, *percristatum* and *grandiceps*, and who will acquire the habit of appraising the value or merit of a wild " find " or a seedling fern on the basis of the distinctive character and refinement of its fronds. If artistic fern gardens would prove to be a means of first attraction for such recruits, it would be worth an endeavour to convert our collections of ferns into fern gardens, and it would be something achieved to the advantage of British horticulture to induce many garden owners to plant some ferns even though they might not become pteridologists according to our standards.

Mr. Elliot mentioned interplanting flowering plants among ferns. Yes ; if space permits, it is an excellent idea, but one needs to go warily lest the companionship develops into oppression from the ferns' standpoint. I have a few liliums between some of my *Polystichums* and *Lastreas* ; they are happy, and do the ferns no harm. Two or three forms of anemone nemorosa flower freely around *Athyriums* and have finished before the fern fronds spread. A few years ago, however, I planted Colchicum speciosum between some *Scolopendriums*. All was well in the autumn when the flowers made a beautiful show, but in spring, when the bulbs sent up their strong growths and unfolded their spread of big broad leaves, the *Scolopendriums* had a sorry time, and out the colchicums had to come. Another effort that went awry was the planting of a few small pieces of Primula Juliæ nearby some *Polypodiums*. For the first season the effect was pleasing, but the way those Primulas ramped away was alarming. They, too, had to be sacrificed, and little bits left behind because they had wormed their way between a few rough stones started the trouble afresh, and at the second clearance stones and *Polypodiums* had both to be lifted to get the soil clear of the Primula.

The gist of this is simply that where, through lack of space, the ferns one really wants must be planted rather close together, only plants which are not aggressive or those of small proportions should be associated with them. The alternative is to have definite colonies of ferns separated by drifts of flowering plants. By this arrangement one has quite a wide choice of subjects. Trilliums, hardy cyclamen, hepaticas, Astilbe simplicifolia, Tiarella cordifolia, Actæa spicata, Podophyllum Emodi and Rodgersia pinnata are a few very appropriate companions for ferns where they can have their own quarters between different groups of the latter, but few plants indeed seem to fit in with such a scheme so well as the Epimediums. Their foliage is so elegant that it tones in with the ferns, yet in spring, and again in autumn, the leaves are tinted in a manner that baffles description, and the racemes of flowers in summer are totally different from anything else in the garden. Many a time I have heard a guess made that " it is a spray of some kind of orchid " when a stem has been cut and shown to some young gardener who is loth to confess he does not know.

A. J. MACSELF.

MORE ABOUT HYBRID FERNS: A REVIEW OF THE SITUATION.

The Rev. E. A. Elliot, in his contribution on " Ferns near Bournemouth " (GAZETTE, Vol. VII, p. 55), asks the question, " What points should be looked for in a fern which is supposed to be a hybrid ? " or, in other words, what is the difference between a hybrid and a variety ?

The reply must be that a variety appertains to only one species to which it conforms in all important specific characters. A hybrid, on the other hand, partakes of the characters of at least *two* species—more only if it should be a hybrid between two other hybrids or between a hybrid and a third distinct species—what we may call a compound hybrid. Hybrids of this latter character are not at present

known among ferns, but are by no means uncommon in cultivated orchids, among which may be found plants showing the characters, not only of three *species*, but of three distinct *genera*. *Brassia-Lælio-Cattleya* may be mentioned as an example of this compound hybridism.

Let us examine some of the several hybrids which have been found between the British species of *Dryopteris* (otherwise *Lastrea*). The best known of these is *D. remota*, so named by Professor A. Braun before its hybrid character was recognized. This was afterwards found in this country, first in Westmorland, and was hailed by the late Thomas Moore as a new British species. Dr. Lloyd Praeger afterwards found what was apparently the same thing in Ireland. I say " apparently " because I have never seen the living and growing plant although Dr. Praeger sent me fresh fronds which I recognized as being identical with the Windermere *remota*. It is possible, however, that if the two plants were grown together for some time, minor differences might be found between them. Now *remota* is generally recognized as a hybrid between *filix-mas* and *spinulosa*, having the general outline and erect caudex of *filix-mas* along with the characteristic cutting and spinulose teeth of *spinulosa*. Its almost universally barren character, in spite of its bearing abundant sori is another peculiarity which distinguishes it from a species proper. The late Mr. E. J. Lowe told me that he had sown it " fifty times without success." I have myself sown it several times with the same result. It is, however, quite possible that it may still be raised from its own spores and I hope to make further trials. In his last published letter, M. Kestner writes : " *Dryopteris remota* : M. Oberhalzer took us next day to a densely wooded valley where *D. remota* has formed a large colony and evidently reproduces itself freely as *D. subalpina* does elsewhere." Now *D. subalpina* is intermediate between *filix-mas* and *dilatata* and is therefore just as much a hybrid as is *remota*, so it is a little odd that it should be so freely fertile. I have myself sown it, only this year, and a large crop of seedlings is the result.

Mr. Boyd's "find" (which Dr. de Tavel names *D. elata, Boydii*) is believed by Dr. de Tavel and others to be *paleacea* × *dilatata* partaking of the characters of both these species. I have myself sown it twice and in both cases obtained an abundant crop of sporelings. It comes up in fact "like mustard and cress." As might be expected this fern bears, at first sight, a close resemblance to *subalpina*, but is distinguished from it by its thicker texture, more shaggy stipes, by a slight glossiness of the surface in a certain stage of growth and by the yellowish green colour of the young fronds. Also the shape of the "crook" in the developing fronds is of the elongated type, which is given by Wollaston as one of the distinguishing marks of *paleacea* as distinct from *filix-mas*. Finally, Mr. Boyd has left it on record that this fern, when found, was growing in company with *paleacea* and *dilatata*, no *spinulosa* being seen. Both *Boydii* and *subalpina* are sharply distinguished from *remota* by having more or less of the dark median stripe in the scales of the rachis which is characteristic of *dilatata*, but of no other British species and which is entirely absent from *remota*.

Of hybrid British ferns the late Mr. G. B. Wollaston, a great fern man in his day, published the following list in The Gazette (Vol. V, No. 6, p. 130) in 1925 :—

"*Lastrea pseudo-mas* × *L. spinulosa*, now called *L. remota*, Moore.

Asplenium marinum × *A. lanceolatum*, now called *A. marinum var. microdon*.

Asp. marinum × *A. Adiantum nigrum*, now called *A. Adiantum-microdon*, Moore.

Asp. trichomanes × *A. viride*, now called *A. refractum*, Moore.

Asp. trichomanes × *A. Adiantum nigrum*, now called *A. trichomanes confluens*, Moore.

A. trichomanes × *A. Ruta-muraria*, now called *A. Germanicum*, Weis."

The above list was published only eleven years ago, but botanical opinion has changed considerably with regard to the parentage of most of them. Many of them were strongly contested even in Wollaston's time. With regard to the two *microdons* probably no one now believes that they have anything to do with *marinum* ; there is some reason to believe that they are hybrids of *lanceolatum* and *Adiantum-nigrum* respectively with *Scolopendrium*. *Asp. refractum* is now lost to cultivation and many guesses have been made as to its parentage. Nevertheless, it is possible that Wollaston may have been right. His guess is as good as any of the others so far. Mr. W. Wilson, of Kendal, found a plant which he, and other good judges, believed to be *A. trichomanes* × *A. viride* because the stipes and lower half of the rachis was black, while the upper half was green. Unfortunately, this plant died without issue. It was never, I think, identified with the lost *refractum*. The latter has been variously regarded as a variety of *fontanum* and of the exotic *A. ebeneum* and as a hybrid of *fontanum* × *A. trichomanes* and, later, between *Forisiense* and *trichomanes*. It was certainly different from the hybrid between the two latter species which has been found wild in Switzerland and also raised under cultivation by our late member, M. Paul Kestner.

A. Germanicum, until recently regarded as a species, and generally so described, has been proved by M. Kestner to be *A. septentrionale* × *A. trichomanes*.

A. trichomanes confluens, of which several wild "finds" have been made, was first thought to be a hybrid with *A. marinum* and is so described by Lowe in his work on "British Ferns and where found," published in 1891. The present writer was the first, I think, to suggest that it might be a hybrid with *Scolopendrium* because

(i) it had never been found growing with *marinum* ;

(ii) it had no resemblance to *marinum* in texture ;

(iii) it occasionally produced fronds which were entirely strap-shaped like those of *Phyllitis Scolopendrium*

Later, however, Mr. Amédée Hans, in the United States, has raised *confluens* by sowing the spores of *Scolopendrium and trichomanes* together (presumably by accident). This was recorded in the American Fern Journal in 1916, and is referred to in The British Fern Gazette in 1928 (Vol. V, p. 215) and again in 1935 by M. Kestner (Vol. VII, No. 1, p. 23).

Late in the autumn of 1935 I had a number of seedlings —a dozen or more—come up on the soil of a pot in which *A.t. confluens* was growing. None like them came up anywhere else and I took them to be seedlings from *confluens* as they looked like *trichomanes* and were apparently all alikc in that stage of growth. Unfortunately, all of them except one " damped off " during the winter. A solitary survivor remained, but grew very slowly and it was not until the summer that it could be recognized as a *Scolopendrium*, not normal but with a tendency to be pinnate—a *projectum* in fact. It is, of course, possible that this plant may be a stray seedling from *sagittato-projectum*, Moly, of which I had two plants upon the premises, though neither of them was in or near the house where the seedlings came up ; neither did any other seedlings of this variety appear either in the house or elsewhere, but only those upon this one pot of *trichomanes confluens* (Stabler's form). The seedling has now fronds from two to four inches long, all, except the smallest, being of distinctly *projectum* character. While it is not proven that this plant was a seedling from *confluens*, it is at least a singular series of coincidences and it will be worth while for anyone who has plants of this hybrid to look out carefully for some sporangia which I have myself seen several times, but have only once actually sown with the result that one plant, resembling the parent, was raised, but was evidently of feeble constitution and died not long after its character had been distinctly recognized.

A similar and equally inconclusive experience resulted from sowing the spores of *Asp. lanceolatum microdon* (see Gazette, Vol. V, pages 14 and 77). The late M. Kestner

was more successful in the case of *Asplenium Germanicum* which he was able to produce by sowing together the spores of *A. septentrionale* and *A. trichomanes* (GAZETTE, Vol. VII, No. 2, p. 29).

Another possibly hybrid European fern was described by Milde under the name of *Scolopendrium hybridum* and was regarded by him as a hybrid between *S. Hemionitis* (or *S. vulgare*) and *Ceterach officinarum*. In Britten's "European Ferns" a short account of this fern is given and it is there stated that only one example of it had been found and that was on an old wall of a vineyard near Porto Zigale in the island of Lossin in the Adriatic Sea. More recently, however, according to M. Kestner, a few more plants have been found in other islands of the Adriatic. A spore-bearing frond was sent to M. Kestner from the island of Lunin. M. Kestner brushed off some spores and raised plants from them and, mainly from that fact, he formed the opinion that it was not a hybrid but a species *per se*. He afterwards sent on the frond to me and I was able to collect from it a few more spores which I sowed and have now about a dozen tiny plants as the result. My reason for referring to this plant here is the fact that the late Mr. E. J. Lowe believed that he had raised a hybrid between *Scol. vulgare* and *Ceterach*. I paid Lowe a visit about 1896 and though the plant was then dead I saw its corpse, still in the pot in which it had grown, with the fronds still showing their general shape and character, although no longer green, and I had no more doubt than had Lowe that it was a hybrid *Ceterach* × *Scolopendrium*. I afterwards saw a dried frond from the same plant in the possession of Mr. Druery, who had preserved it, after drying, by fixing it between two pieces of glass so that both sides of the frond could be examined. The frond resembled *Ceterach* in outline, although less scaly, and showed distinctly the twin indusia which are characteristic of *Scolopendrium*. Unfortunately, this specimen could not be found after Mr. Druery died, and Mr. W. B. Cranfield, who bought his stock of ferns and dried specimens, never received nor even saw it.

When these facts were brought to the notice of M. Kestner he suggested that possibly Lowe might have received a frond of the Adriatic plant and that Lowe's " hybrid " might have come from a stray spore of it. It is curious that Lowe, so far as I can discover, has made no reference to this plant in any of his books, although, in his latest work, published in 1895, he makes several references to hybrid ferns. I am exceedingly curious to see what my seedlings from the Adriatic fern will be like when fully developed. They may throw some light on the botancial status of the parent.

F.W.S.

THE VARIABILITY OF POLYPODIUM VULGARE.

Although not so variable as *Polystichum angulare*, *Athyrium filix-femina* or *Scolopendrium vulgare*, *Polypodium vulgare* shows a great number of varieties. E. J. Lowe enumerates in his booklet, " British Ferns and Where Found " (London, 1908), not less than 75 of them. In the fundamental " Flora of Central Europe " by Ascherson and Graebner (Leipzig, 1912) 74 are mentioned for this region. But the Continental forms and the British ones are only for a small part the same ; it is no easy matter, without the use of comparative material, to identify the forms described by British authors with those which have been set up by the writers of the Continent.

To bring order into the multitude of forms—I speak now only of the Continental, not knowing sufficiently well the British ones—three sub-species have been set up, which differ mainly by the ramification of the secondary nerves of the pinnæ.

Sub-sp. *vulgare* comprises the forms with bifurcated nerves, as, for instance, the pictures of the two smaller fronds on Plate I in Thos. Moore's " Nature-printed Ferns," 8vo edition, show. There is a variety, *angustum*, Hausmann, with very narrow fronds, whose nerves are only once forked ; to avoid the creation of a fourth sub-species, it is included in sub-specie *vulgare*, too.

Sub-sp. *prionodes* comprehends the forms with trifurcated nerves as in the middle frond on Moore's above-mentioned plate and Fig. 6 in Lowe's " Our Native Ferns," Vol. I. The forms of this sub-species are generally larger than those of sub-species *vulgare*.

The most luxuriant forms, however, belong to sub-sp. *serratum* (Willd). Their nerves are more than trifurcated (Moore, Pl. III E). *Serratum* is a rather meridional type, native of the Atlantic Islands and the South of Europe, radiating to England and Ireland (where it reaches its highest development in var. *Cambricum*) and to the south slope of the Alps.

Of course, there are some other characteristics of these three sub-species which I do not wish to explain here, but it must be said that they are not sharply separated but are connected by intermediate forms. On the whole, it can, however, be said that it is not too difficult to distinguish them.

Revising the material of my herbarium I tried to assign to each of these sub-species its part of all the forms of *Polypodium vulgare* and found that the varieties of these sub-species form parallel lines. In all of them there occur analogous, yet different, forms with narrow, or broad, short or elongated, short- and long-stalked fronds. In all three we find forms with blunt, rounded or acute, broad or narrow and even imbricate segments. In all three lines there is a progression from denticulate to crenate and pinnatifid pinnæ, each one ending with beautiful plumose forms, the *vulgare*-line with *Cornubiense* and *trichomanoides*, the *prionodes*-line with *omnilacerum* and *superbum*, and the *serratum*-line with *pulcherrimum*, *Cambricum* and its wonderful crown of *Prestonii*, *Barrowii*, *Hadwinii*, *Atkinsonii*, etc.

Only a few varietal types are confined to one sub-species alone, such as *vulgare brevifolium* with very short triangular pinnæ. A variety with simple leaves, like many tropical *Polypodies*, occurs in the *vulgare*- as well as in the *serratum*-line.

The dwarf varieties deserve special attention. According to a paper of the late Professor von Goebel in Munich they are not only "hunger-forms," but true varieties. In all our three sub-species we meet some of them.

According to the "Regulations of Botanical Nomenclature," the varieties of the different sub-species must also have different names. This necessitates the creation of some new names which will be published in due time. But I do not think it necessary to alter the names of the multitude of

abnormal forms. They may keep their old well-known names of *furcatum*, *bifidum*, *cristatum*, *depauperatum*, etc. Some of them, like *truncatum*, *cornutum*, *flabellatum*, etc., seem only to be found in the *serratum*-line.

Other features which cannot be called abnormalities, but may also be combined with nearly all varieties, such as opposite, distant, variegated or auriculate pinnæ, I do also not consider as varieties, but as sports (lusus) and keep in the same way for them in all three lines their old names. This proceeding allows to reduce to a minimum the introduction of new names.

As was remarked above it was not possible to assign to each of the British varieties its place among the three subspecies. There is much room left for further studies and completion. For the time being it may be sufficient to draw the pteridologist's attention to this new system of the varieties of *Polypodium vulgare*.

F. DE TAVEL.

LIST OF MEMBERS OF THE BRITISH PTERIDOLOGICAL SOCIETY.

HONORARY MEMBERS.

Baker, W. G., Botanic Gardens, Oxford.
Bower, Professor F. O., M.A., D.Sc., F.R.S. etc., 2, The Crescent, Ripon, Yorks.
Curtis, Charles H., J.P., F.L.S., V.M.H., Editor, *The Gardeners' Chronicle*, 33, John Street, Theobald's Road, London, W.C.1.
Hawkins, Rev. Canon E. H., M.A., Trinity Lodge, Bisley, Stroud, Glos.
Hay, Thomas, V.M.H., Superintendent, Hyde Park, London, W.2.
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Preston, F. G., Botanic Gardens, Cambridge.
Wilson, William, 1, Sleddalls Almshouses, Kendal.
Wright, Charles Henry, A.L.S., Kew Cottage, Townsend Road, Seaton, S. Devon.

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Adkin, F. N., River Knowle, Northam, N. Devon.
Alston, A. H. G., B.A., F.L.S., Dept. Botany, British Museum (Nat. Hist.), Cromwell Road, London, S.W.7.
Andersson-Kottö, Miss Irma, John Innes Horticultural Institute, Mostyn Road, Merton Park, London, S.W.19.
Askew, W. F., Fern Nursery, Grange, Keswick, Cumberland.
Atkinson, F., Lake Side Cottage, Keswick, Cumberland.
Bigland, J. W. S., 20, Parkfield Road, Bebington, near Birkenhead.
Blow, Thomas Bates, F.L.S., The Chalet, Welwyn, Herts.

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Cordrey, C., 151, Bedfont Lane, Feltham, Middlesex.
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Hall, Alva J., Victoria Nursery, Victoria Road, Harrogate, Yorks.
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Hawker, Captain H. G., Strood, Ermington, Devon.
Hawkings, George, Cressy House, Goldhawk Road, London, N.W.
Henwood, Thomas E., 16, Hamilton Road, Reading.
Hollings, Frederick, 37, Garbett Street, Accrington, Lancs.
Horticultural Society, The Royal, Vincent Square, Westminster, S.W.
Jackman, W. & Son, Nurseries, Woking, Surrey.
Kaye, Reginald, Waithman Hardy Plant Nursery, Silverdale, Lancs.
Kentucky University, Dept. of Botany, Lexington, Kentucky, U.S.A.
Knox, Major-General Sir Alfred W. F., K.C.B., C.M.G., M.P., Binfield House, Binfield, Berks.
Laurie, G. F., Laurel Villa, Kenmure Avenue, Bishopbriggs, Scotland.
Lawson, G. C., Mayfield House, near Ashbourne, Derbyshire.
Leak, G. W., 1, Clapham Avenue, Wisbech, Cambs.
Lloyd, Joseph, 4, Richmond Road, Birkdale, Southport.
Lovelady, John, 129, Manchester Road, Haslingden, Lancs.
Lyle, Neil C., The Gardens, Donibristle Park, Inverkeithing, Fife, Scotland.
Macself, A. J. (Editor, *Amateur Gardening*), 114, Hamilton Road, Reading.
Macwatt, Dr. John, Morelands, Duns, Berwickshire, Scotland.
Manton, Miss Irene, B.A., Ph.D., Dept. Botany, Victoria University, Manchester.

Mardell, Alfred, East Lodge Gardens, Enfield Chase, Middlesex.
Marsh, Miss S. A., Glenlyon, Holywood, Co. Down, Ireland.
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Monro, George, C.B.E., The Red House, Hendon Road, Church End, Finchley, London, N.
Moore, Rev. Canon H. Kingsmill, D.D., F.L.S., Cedar Mount, Dundrum, Co. Dublin, Ireland.
Musgrave, C. T., F.R.H.S., V.M.H., Hascombe Place, Godalming, Surrey.
Naylor, E., Corner Garth, Leadhall Lane, Lucas Road, Harrogate, Yorks.
Oliver, Arthur, Tower Road, Darnick, Melrose, Roxburghshire, Scotland.
Parkinson, J. J., The Lodge, East Lodge Gardens, Enfield Chase, Middlesex.
Perry, Amos, F.R.H.S., The Nurseries, Enfield, Middlesex.
Phillips, Hugh, High Elms, Hitchin, Herts.
Pyke, Arthur, 10, Hanover Terrace, N.W.1, and Westwoods, Windlesham, Surrey.
Ransom, R. F., Wymondley Bury, Hitchin, Herts.
Reuthe, G., F.R.H.S., Foxhill Nursery, Keston, Kent, and 109, Crown Lane, Bromley, Kent.
Rowlands, Dr. S. P., M.B., B.S., Abbeville, 42a, Beckett Road, Doncaster, Yorks.
Rugg, H. G., Dartmouth College Library, Hanover, New Hampshire, U.S.A.
Russell, Archibald, 4, Crossgate, Cupar, Fife, Scotland.
Russell, L. A., Richmond, Surrey.
Saorstát Éirann, Stationery Office, Publications Branch, Dublin.
Sherrin, W. R., A.L.S., South London Botanical Institute, 323, Norwood Road, London, S.E.24.
Sinclair, James A., 57, Stradella Road, Herne Hill, S.E.24, and 3, Whitehall, S.W.
Smithers, Major A., Morleys, Great Hallingbury, Essex.
Smith, Ewart G., 147-151, High Street, Christchurch, New Zealand.
Stansfield, F. W., M.D., D.P.H., F.L.S., 120, Oxford Road, Reading.
Stansfield, Tom, M.B., B.S., 120, Oxford Road, Reading.
Stephens, G. E., 36, Bedford Road, Horsham, Sussex.
Stephens, Edward J., Rose Lawn, Digwell, Welwyn, Herts.
Stormonth, John, Nurseryman, Kirkbride, Carlisle.
Sudell, Richard, F.I.L.A., A.R.H.S., 4, Bedford Square, London, W.C.1.
de Tavel, Dr. F., 22, Schosshaldenstrasse, Bern, Switzerland.
Taylor, Miss Jean, Lily Hill Nursery, Bracknell, Berks.
Thorrington, Francis W., Sunnymead, Little Baddow, near Chelmsford.
Thorrington, Mrs., Sunnymead, Little Baddow, near Chelmsford.
Trotter, P. D., Leith Vale, Ockley, Surrey.
Warren, James, Flat 2, 13, Bruton Street, London, W.1.
Weiss, Professor F. E., F.R.S., F.L.S., Easedale, Woodway, Merrow, near Guildford, Surrey.
Westley, Edwin, 2865, Nina Street, Lamanda Park, Pasadena, California, U.S.A.
Whiteside, R., 51, Borrowdale Road, Lancaster.
Wilding, Ernest, Wexham Place, Stoke Poges, Bucks.
Williams, J. C. (Lord Lieutenant of Cornwall), Caerhays Castle, Gorran R.S.O., Cornwall.
Wiper, Ernest, 726½, Yates Street, Victoria, B.C., Canada.
Wynch, Mrs. Violet A., F.R.H.S., Pine Hill, Camberley, Surrey.

THE BRITISH PTERIDOLOGICAL SOCIETY

THE SOCIETY originated, in September 1891, in the Lake District with headquarters at Kendal. Its members were, however, distributed throughout Great Britain and Ireland, whilst some few reside in the Dominions and U.S.A. Its declared objects were :—

(i) The Study of Species and Varieties of British Ferns ;

(ii) The Recording of Information with regard to Ferns generally.

The British Fern Gazette was established in September 1909, publication being quarterly until the commencement of the war. After the war publication was restricted to two issues per annum on account of the increased cost of printing and the decrease in the number of members. It is hoped shortly to resume quarterly publication.

Members are invited to communicate with the Hon. Secretary on subjects of interest with regard to British Ferns.

Certificates are awarded to new ferns of distinction of which plants or characteristic fronds are shown at the Annual Meeting for adjudication. The Annual Meeting is held usually in August or September, at some place where ferns are abundant and from which excursions for fern hunting can conveniently be arranged. These excursions are an important feature of the Society's activity.

Fronds may be sent to the Hon. Secretary to be identified or named at any time.

Recently a Sub-Committee of the Society undertook the correct naming of the National Collection at Kew and, in conference with the Director and staff, planned and arranged the present fernery, supplementing the collection with gifts of plants from the ferneries of some of the members.

The collection in the Royal Horticultural Society's Garden at Wisley was similarly dealt with and augmented.

The Society is affiliated to the Royal Horticultural Society, which is also an individual subscriber to its funds.

The Committee is endeavouring to increase the membership of the Society and, through this and by other means, to encourage the more general cultivation of the varieties of British ferns. Any lover of horticulture is eligible for membership and the subscription is 10s. per annum (due in advance at or immediately after the Annual Meeting), which entitles members to copies of *The Gazette*.

The Hon. Treasurer or Hon. Secretary will be pleased to supply members who may desire it with Bankers' Orders for the convenient payment of subscriptions.

Further particulars may be obtained from the Hon. Secretary.

F. W. STANSFIELD, M.D., F.L.S.,
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VOL. VII. No. 4.

The British Fern Gazette

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JAN 6
NATIONAL MUSEUM

November, 1937

EDITED BY

A. H. G. ALSTON, B.A., F.L.S.

DEPT. OF BOTANY, BRITISH MUSEUM (NAT. HIST.),
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THE BRITISH PTERIDOLOGICAL SOCIETY

President: Mr. W. B. Cranfield, F.R.H.S., V.M.H., F.L.S., East Lodge, Enfield Chase, Middlesex.

Hon. Secretary: Mr. P. Greenfield, Beech Bank, Stuart Road, Warlingham, Whyteleafe, Surrey.

Hon. Treasurer: Mr. J. J. Sheldon, F.L.S., "Monkhams", Lower Road, Great Bookham, Leatherhead, Surrey.

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Dr. F. W. STANSFIELD (*left*) and Mr. T. HENWOOD.

THE
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NEW SERIES.

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FOREWORD BY THE PRESIDENT.

THE present issue of the GAZETTE inaugurates a new era in the history of our Society following the catastrophe brought about by the lamented death of Dr. Stansfield, its Editor, and Secretary of the Society. Dr. Stansfield's devotion to the Society's affairs was unbounded, and for many years he has been its guiding spirit.

It is hoped that the new arrangements which have occasioned your Committee so much anxiety may meet with the approval of members and extend our Society's sphere of usefulness.

The initial difficulties having been surmounted, the most important problem to be solved is that of increasing our membership. This can only be accomplished from within, and I would earnestly beg our members firstly to spare no effort to secure accession to our numbers, and secondly to advocate the cultivation of British Ferns on every available opportunity, remembering that once interest is aroused and

encouraged, enthusiasm follows. The Genetics of British Ferns is now receiving the attention of Scientists in this country and elsewhere, and with the broadening of interest the task of securing new members should not prove insuperable.

May I rely on the individual effort of my fellow members ?

W. B. CRANFIELD.

THE ANNUAL MEETING, 1937.

The Forty-second Annual Meeting of the Society was held at the " Coach and Horses " Hotel, Charmouth, Dorset, on July 19th, 1937.

Members present were :
Mr. W. B. Cranfield (President) ;
Mr. A. H. G. Alston ;
Mr. T. B. Blow ;
Mr. R. Bolton ;
Mrs. Bolton ;
Mr. P. Greenfield ;
Mr. J. J. Sheldon ;
Mr. J. A. Sinclair ; and
Dr. T. Stansfield.

In addressing the members the President said that the Society had passed through a period of great anxiety as a result of the death of Dr. Stansfield. The Doctor was for many years Secretary, and Editor of the GAZETTE ; and it was owing to his unbounded industry and unlimited enthusiasm that the Society had flourished and gained in strength until it reached the position it held at the time of his death.

In view of the emergency he had summoned the Committee to consider the position, and the circular which had been issued showed the course of events.

The Society had sustained a further loss by the death of Mr. T. E. Henwood, one of the Doctor's greatest friends ; it

DEC 3 0 1937

was a coincidence that they died in the same month, and it was a double tragedy.

There had been unavoidable delay in the issue of the GAZETTE, but it was now in the hands of Mr. Alston, and its appearance would not be much longer delayed.

He hoped that the Committee's proposal to perpetuate the memory of Dr. Stansfield by a Medal would be supported. The medal would be awarded by the executive of the Society from time to time to an individual who had rendered exceptional service to the fern cult.

The President mentioned that their member Mr. Alston was Assistant Keeper of Botany at the British Museum, and he had been suggested as their Editor by the President of the Linnean Society. They could rely on Mr. Alston to carry on the GAZETTE not only in the traditions of the past, but with the enthusiasm of youth in the future. To some extent they might break fresh ground, but this would bestir interest.

The President thought the members would agree that it is lamentable when a man passes away if a valuable collection he had made should be dispersed. The right thing seemed to be to provide for our collections to be handed to some authority for safe keeping, so that posterity may benefit. They might like to know that Mr. Henwood's collection was in his hands and would follow the disposal of his own collection.

Another matter he must touch on was the amendment of their Rules. The present Rules had been made disjointedly, and were rather primitive and out of keeping with their present requirements. For instance they had no power to appoint an Editor as a member of their Executive. All they could do at the moment was to elect Mr. Alston to the Committee. He proposed a Sub-Committee should look into the matter and obtain a re-draft of the Rules for consideration by the full Committee. The revised Rules would then be printed for the information of all members, and subsequently submitted to next year's Annual Meeting for confirmation. [This was agreed.]

*

In conclusion the President referred to the pleasure it gave them to have with them Dr. Tom Stansfield. He inherited his family's sound knowledge of ferns and would uphold their traditions.

After the President's address the minutes of the Annual Meeting of August 27th, 1936, were confirmed.

Letters from members unable to be present were before the meeting, including letters from Canon Kingsmill Moore, Mr. Macself and Mr. Thorrington, and a letter from Dr. de Tavel, of Bern, in which he expressed his appreciation of the help Dr. Stansfield had given him during their three years' correspondence.

The Acting Secretary then read his report as follows :

" The past year has been an abnormal and disastrous one for the Society. Interest in our hobby has been overshadowed by anxiety in regard to maintaining the Society's efficiency and prestige. In the critical circumstances the direction of affairs has been taken over by the President, and the Acting Secretary's duties have been almost entirely limited to giving the President assistance. It will be realized that the President has put in a great deal of hard work for the Society, and it only remains to be said that if he had not been at the helm, the work of reconstruction would have taken much longer and could hardly have been so successful. The Society owes him a deep debt of gratitude.

" As regards membership, it may be mentioned with appreciation that the University of California, U.S.A., has asked to become a member. The number of Honorary Members stands at 9, of Subscribing Members at 95. It will be necessary for the meeting to confirm the election of the University of California and of the new members whose names appear in the December, 1936, issue of the GAZETTE, viz. :

" Mr. J. Brookfield, of Southport.

" Mr. A. Gordon, of Ringmer, Sussex.

" Messrs. G. Jackman & Son, of Woking.

"Major-General Sir Alfred Knox, K.C.B., C.M.G., M.P., of Binfield, Berks.

"Miss Irene Manton, of the Victoria University, Manchester.

"Miss Jean Taylor, of Bracknell, Berks."

The Treasurer, in presenting the Balance-sheet (reproduced below), observed that it included the cost of one GAZETTE only.

BALANCE SHEET.

RECEIPTS.	£	s.	d.	EXPENDITURE.	£	s.	d.
Balance from last year	38	11	7	Affiliation Fee, R.H.S.	2	2	0
Subscriptions	36	12	10	GAZETTE, Dec., 1936	16	17	0
Sale of GAZETTES ...		14	0	Postages		15	3
Advertisement ...	2	2	0	Balance at Bank ...	58	6	2
	£78	0	5		£78	0	5

Audited and found correct, July 19th, 1937.

(Signed) P. GREENFIELD,
Hon. Auditor.

The President remarked that under new arrangements for printing the GAZETTE made by Mr. Alston there would be a small saving.

The Acting Secretary's and Treasurer's reports were adopted.

The President then vacated the Chair and the meeting proceeded to the election of officers.

Mr. Blow proposed that Mr. Cranfield be re-elected President. He said it was unthinkable that anyone else should assume the office. The meeting realized how much he had done for the Society and it was a privilege to propose his re-election.

Dr. Tom Stansfield, in seconding the proposal, said it gave him great pleasure to do so, and he would like to take the opportunity of thanking Mr. Cranfield for the kind things which he had said about his father and himself. He would like to thank the Society, also, for the steps they were proposing to take to perpetuate his father's memory. Mr. Cranfield's

election was confirmed with acclamation. In thanking the meeting for electing him, Mr. Cranfield referred to the long time he had held the office, and remarked that at the present juncture he realized he might be useful, and that the Society was more than welcome to anything he could do for it.

The Vice-Presidents were re-elected *en bloc.*

Mr. J. J. Sheldon was re-elected Treasurer on the proposition of Mr. Greenfield, who paid a tribute to Mr. Sheldon for the help he had given during the crisis in the Society's affairs. Mr. Bolton seconded.

Mr. Bolton proposed and Mr. Sinclair seconded that Mr. P. Greenfield should be appointed Hon. Secretary. This was carried unanimously.

Mr. Sinclair was appointed Hon. Auditor on the proposition of Mr. Blow, seconded by Mr. Bolton.

The President then proposed the election of Mr. Alston to the Committee. He referred to the satisfaction they felt in having Mr. Alston as their Editor. It helped them out of their main difficulty, and they were very grateful to Mr. Alston for taking up the work. Mr. Sinclair seconded, and Mr. Alston's election was confirmed with enthusiasm.

The following is the list of officers of the Society :

President :

Mr. W. B. Cranfield, F.L.S., V.M.H.

Vice-Presidents :

Mr. T. B. Blow, F.L.S.
Mr. R. Bolton, F.R.H.S.
Mr. A. Cowan.
Mr. F. J. Hanbury, F.L.S.
The Rev. Canon H. Kingsmill Moore, D.D., F.L.S.
Mr. J. A. Sinclair.
Prof. F. E. Weiss, F.R.S., F.L.S.

Hon. Treasurer :

Mr. J. J. Sheldon, F.L.S.

Hon. Auditor :

Mr. J. A. Sinclair.

Hon. Secretary :

Mr. P. Greenfield.

Committee :

Mr. A. H. G. Alston, B.A., F.L.S.*
Mr. T. Bolton, F.R.H.S.
Mr. J. Dargue Dixon.
The Rev. E. A. Elliot, M.A.
Mr. J. Lloyd.
Mr. A. J. Macself.
Dr. S. P. Rowlands.
Dr. T. Stansfield.
Mr. F. W. Thorrington.
Mr. R. Whiteside.

The President proposed the election of Mr. H. Reeves as a member as well as the ladies and gentlemen whose names appear in the Secretary's report. Mr. Sheldon seconded and the meeting confirmed the elections.

There followed some discussion as to the election of further Honorary Members. Ultimately it was decided to authorize Mr. Alston to invite a limited number of scientific persons likely to be interested in the Society to become Honorary Members.

The Secretary gave an account of the inquiries he had made, on the instructions of the Committee at their meeting in April, as to the design and cost of the medal proposed as a suitable memorial to the late Dr. Stansfield. It was felt that this was a matter which might best be dealt with by a small sub-committee, and further discussion was postponed.

The usual difficulty was experienced in deciding the place of meeting for the next year. In the hope that it would enable many of the northern members to attend it was ultimately decided to hold the 1938 meeting in the Lake District.

The meeting then proceeded to the examination of fronds exhibited by the President, Mr. Blow, Canon Kingsmill Moore and Mr. Sheldon.

* Mr. Alston is Editor of the GAZETTE.

**

Certificates were awarded :

To the President for—

Scolopendrium ramo-cristatum, Cranfield.

Polystichum aculeatum gracillimum cristulatum, Cranfield.

,, ,, ,, *pulcherrimum*, Cranfield.

Polystichum angulare divisilobum discretum, Clapham.

and to Mr. Sheldon for—

Polystichum aculeatum grandiceps, Sheldon.

,, *angulare plumosum elegans*, Sheldon.

,, ,, *divisilobum pallens*, Sheldon.

Scolopendrium crispum angustifrons, Sheldon.

The meeting closed with a hearty vote of thanks to the Chairman. P. GREENFIELD.

THE CHARMOUTH MEETING.

On July 15th members reached the " Coach and Horses " at Charmouth to attend the Annual General Meeting on the following Monday (dealt with elsewhere), and indulged in a week's fern hunting in this, probably the ferniest district in the country. The following species were met with :

Asplenium Trichomanes, *A. Ruta-muraria*, *Ceterach*, *A. Adiantum nigrum*, *Athyrium Filix-foemina*, *Lastrea Filix-mas*, *pseudo-mas*, *montana*, *dilatata* and *spinulosa*, *Polystichum angulare*, *P. aculeatum*, *Scolopendrium vulgare*, *Blechnum Spicant*, *Polypodium vulgare* and *Pteris aquilina*.

The hedge banks were, in all but the driest situations, crowded with ferns, whilst in the woods, spinneys and water-side they were exceptionally luxuriant. As cars belonging to members were available, the party divided into sections—to avoid overlapping. All impedimenta being carried in the

cars, hunting was not only luxurious, but much more ground could be covered without the fatigue of much walking and porterage. Lanes, woods and commons in the following localities were visited and in some cases hunted systematically—Charmouth, Lyme Regis, Uplyme, Combpyne, Rousdon, Seaton, Axmouth, Colyton, Beer, Branscombe—but of course but a mere fraction was thoroughly explored.

One of the party, Mr. T. B. Blow, is a botanist of some eminence, and discussing the habitat of rare British Plants, the President stated that *Lobelia urens* occurred on the outskirts of Branscombe, in a meadow near a waterwheel, where it was collected by the late Dr. Stansfield some years ago. An excursion to Branscombe was arranged. There being two waterwheels some distance apart, the wrong one was selected and the quest was abandoned. The habitat for *Lobelia urens* and *Hypericum elodes*, another rare British plant, was confirmed by Mr. A. Perry, who some few years ago collected both in quantity for his business of waterside plants. Visits to renew old acquaintances were made to Beer, Colyton, Colyford, Axmouth, Seaton, Axminster. Some were renewed, but several had passed on.

The meeting was memorable for a visit to the gardens of Langmore Manor, formerly the residence of the late James Moly, where the writer spent a long time when removing the large collection formed by that renowned fern hunter. It is a natural fern and general horticultural paradise. Among the few abnormal forms observed were *P. ang. pendens*, Wills, and several *divisilobes*, probably descendants of former occupants, but normal forms were luxuriant in walls, shrubberies and waterside. The present proprietor had added to the house and to the estate by the acquisition of an adjoining farm and other properties.

A visit to the Landslip at Rousdon revealed hundreds of thousands of *Phyllitis Scolopendrium*, to describe the luxuriance of which the imagination boggles. Experienced fern hunters

as some of the party were, nothing comparable had ever been seen before. In the garden of Dowlands Cottage, where tea is served, may be seen patriarchal single specimens as tall and broad as the tea-tables, whilst all around similar plants abounded. Though many thousands were looked over, no variations beyond a slight tendency to undulation and an occasional divided frond tip were seen. The luxuriance of the ferns was equalled if not exceeded by the stinging-nettles, whose spines easily penetrated clothing, with unpleasant results.

On this excursion no variety of outstanding merit was discovered, but it must be borne in mind that the standard adopted by hunters to-day is much higher than in the past, and that many sub-varieties were left undisturbed which years ago would have been annexed.

The following finds were recorded :

Scolopendrium vulgare multifidum—T. B. Blow (as a souvenir).

Blechnum spicant cristatum—R. Bolton (from directions of T. B. Blow, by whom the plant was seen many years ago).

Polystichum aculeatum cristatum—R. Bolton. A nice form, but inferior to a former find by the same member.

Polystichum angulare tripinnatum—Dr. T. Stansfield. In a hanging wood near Lyme Regis.

P. ang. lineare—by the same finder, two separate finds. Small plants, of which one will probably prove the better.

P. ang. lineare—W. B. Cranfield. On the roadside hard by ; a very good form.

P. ang. acutilobum (2)—P. Greenfield and T. Stansfield.

It is to be regretted that more members do not attend these Annual Meetings and hunting excursions. The advent of the motor car has rendered fern hunting much less laborious than heretofore, and if no outstanding plants are discovered, to the lover of Nature there are always objects of interest

to be observed. The atmosphere of good fellowship, the exchange of experiences and ideas are additional pleasures, whilst the possibility of securing an outstanding specimen adds zest to the proceedings. Whilst those who are no longer with us were greatly missed, we believe that the 1937 excursion will be remembered as one of the most pleasant in the history of our Society.

W. B. CRANFIELD, F.L.S., V.M.H.
T. STANSFIELD, M.B.

OBITUARIES.

Frederick Wilson Stansfield, M.D., D.P.H., F.L.S. (1854–1937).

By the death of its Secretary, and Editor of its Gazette, the Society has suffered an almost irreparable loss, whilst to his personal friends the passing on of "The Doctor", as he was affectionately called, creates a blank which cannot be replaced. The writer can never forget the pathos of our last interview, which took place on February 8th, the day of his old friend T. E. Henwood's funeral a month before his own death. We both felt it was farewell for all time, and his last words, other than those of personal affection, concerned the affairs of our Society, of which it may in truth be said he was the mainspring. The writer was able to assure him of the steps then being taken, which have since materialized, to ensure the Society's existence.

Born at Todmorden, Lancs, his early years were spent in his father's Fern Nursery at Todmorden, which was founded by his grandfather. He established the Fern Nursery at Sale, which he disposed of to his brother Herbert when he qualified in medicine and surgery in 1889. He practised for a time in Derby, going to Reading in 1893, where the remainder of his life was passed. He gained the M.D. (Manchester) in 1900 for a thesis on cancer houses, and the D.P.H. (Cambs) in

1893. He was Public Vaccinator for Reading and President of the Association of Public Vaccinators of England, a past-President of the Reading Pathological Society (1935–6), and past President of the Oxford and Reading Branch of the British Medical Association. Elected a Fellow of the Linnean Society of London in 1927, he was one of the Founders in 1891 of our Society, of which he was a past President and, since 1917, the Editor of the Society's GAZETTE, combining therewith the office of Hon. Secretary in 1926.

A botanist of considerable eminence, he was a prolific writer on biological subjects, contributing, *inter alia*, a paper on the production of apospory by environment in an apparently barren fern to the Linnean Society's Journal (in 1899), whilst his contributions to the Society's GAZETTE are without number, and he further conducted an extensive correspondence with continental, American and Colonial botanists.

It was, however, as a fern grower, hunter and raiser of choice varieties of our native British ferns that Dr. Stansfield will be remembered by our members. Being of the third generation of fern specialists, endowed with an unusually retentive memory for form and detail, his knowledge of original finds was extensive and was infallible. He moreover enjoyed the personal acquaintance of nearly all the earlier fern hunters and raisers. As a judge his verdict was unhesitatingly accepted, and he was ever ready to give advice and help to any by whom it was sought, in many instances supplemented by the gift of living material. Such leisure as he permitted himself from his medical practice was spent in the cultivation, experimental raising and hunting for varietal forms throughout the country, holding steadfastly to the view that the most beautiful ferns we now possess were either wild finds or their descendants the direct result of the labours of fern hunters. Himself the finder and raiser of many of the most beautiful varietal forms of our native ferns, many will recall his modesty and boundless generosity.

He passed away on February 28th, 1937, from the effects of pneumonia following an attack of influenza. A funeral service was held in the Unitarian Church, London Road, Reading, attended by a large number of friends, patients and representatives of public bodies with which he had been identified, and he was laid to rest in the same grave as his wife (who predeceased him some ten years) in the Old Caversham Cemetery.

Thus was brought to a close a life of the highest integrity and devotion to duty, esteemed alike by rich and poor. *Vale*, my dear old friend, may everlasting peace be yours.

W. B. CRANFIELD, V.M.H., F.L.S.,
President, B.P.S.

The Stansfield Memorial Medal.

Members will be gratified to know that Dr. Stansfield's memory is to be perpetuated by a medal bearing his profile, which will be awarded annually by the officials of our Society to some individual who has rendered exceptional service to the cult of British ferns.

The cost of the die for the medal will be provided by subscriptions from members and friends of the late Dr. Stansfield. Those desirous of contributing are invited to forward subscriptions to Mr. J. J. Sheldon, the Treasurer of this Society.

The Stansfield Fern Collection.

It is a great pleasure to know that the collection of ferns largely found or raised by the late Dr. Stansfield has passed into the possession of his son, Dr. T. Stansfield, who practised medicine with his father, and with his wife and daughter resided with him since his mother's death some eleven years ago.

May the mantle of the father clothe the shoulders of the son.

Thomas E. Henwood,

The old friend we have lost.

Pteridology has had the support of some grand men, who have done great work in keeping the cult of British ferns alive. Right in the vanguard walked Tom Henwood, of Reading, for many years, and it is not alone the Pteridological Society, but British Horticulture that suffered a grievous blow by our old friend's death, which occurred on February 4th. Mr. Henwood was a remarkable man in many ways. His strength and vitality were extraordinary, and although he followed for over half a century an occupation which demanded incessant alertness and fatiguing concentration, he filled the whole of what most men would have claimed for hours of rest and relaxation with the pursuit of several hobbies, each of which necessitated close attention, continuous study and the exercise of much skill. Moreover, in each of those hobbies he could not content himself with just moderate success, but set to work for and attained the highest honours available. As an ornithologist he kept successfully many of the choicest and most difficult of both foreign and British birds. As a poultry fancier he bred and exhibited Pencilled and Spangled Hamburgh fowls, and when he took up pigeons it was soon to place his name among the prize-winners at the leading shows in the country.

From an early age he made a great hobby of the cultivation of florists' flowers. Show Auriculas and Border Carnations were particular favourites, and in both of these he ranked among the foremost exhibitors. Such was his enthusiasm and unbounded energy that when, in turn, both the National Auricula and the Carnation Societies reached low water and stagnation he shouldered the onerous duties of their secretaryships, and his personality and dogged determination redeemed their fortunes and brought them long periods of flourishing progress.

When Tom Henwood took up British ferns and became a member of the Pteridological Society, he brought the same

unquenched fire of energy and spirit of thoroughness into this as into his other hobbies. With but a small garden and two unheated glasshouses he got together a collection which was thoroughly representative of all the best of ferns, and grew his plants with masterly skill into grand specimens. Of late years he had so many varieties that there was no room in his limited accommodation for duplicates of even the choicest, yet he took the keenest delight in continuing to propagate solely for the joy of giving surplus plants away. There surely cannot have been a more generous man in the whole circle of fern growers, and when he was not sending a plant of something choice to old comrades of the Club to enrich their collections, he was giving a start to some new recruit whom, with his persuasive way, he had induced to take up fern culture.

As the close friend of our late lamented Secretary, Dr. F. W. Stansfield, Mr. Henwood did a tremendous amount of work to help lighten the doctor's labours in the interests of our Society, and now both of these wonderful men are gone, those of us who were in closest contact with them and saw most of what they did are left mourning their loss and looking around, wondering whence shall come fresh stalwarts to safeguard pteridology for the generation to follow us.

A. J. MACSELF.

The Late T. E. Henwood's Ferns.

Members may be interested to learn that the late Mr. Henwood's collection of ferns, bequeathed to his friend the late Dr. Stansfield, have been acquired by the President and, with the exception of those distributed as souvenirs, added to his collection.

R. BOLTON'S EXHIBIT OF BRITISH FERNS.

At the Royal Horticultural Society's Hall, Greycoat Street, Westminster, on August 17th, 1937.

We offer sincere congratulations to Mr. Robert Bolton for a fine exhibit of British ferns which occupied a large space in the centre of the Hall, and embraced several hundred large and small plants of the various species, all in first-rate condition, exhibiting no signs of disfigurement.

The exhibit was edged around with many examples of *Polypodium vulgare cambricum*, *pulcherrimum*, *grandiceps* and other small forms of various species.

Among the outstanding examples were plants of—

A. f. f. clarissima, *A. f. f. regale*, *A. f. f. gemmatum*, *A. f. f. Victoriae*, a number of seedlings of *A. f. f. gemmatum* and one, most gracefully cut, from *plumosum divaricatum*, reminiscent of *plumosum Druery* ; *A. f. f. frizelliae in* various forms, *A. f. f. unco-glomeratum* and an aposporous seedling therefrom which received an Award of Merit.

Among the *Phyllitis Scolopendrium* were fine examples of *crispum speciosum nobile*, Robinson's broad and narrow forms, several forms of *crispum cristatum*, a number of *grandiceps* and *ramose* varieties.

Among the *Polystichums* were a number of very beautiful seedlings in the *plumoso-divisilobum* section from *densum* and *robustum*, Stansfield's *ramo-pinnatum* and others in this section ; *flabellipinnulum*, numerous *divisilobes* and *acutilobes* and *foliose* forms.

P. aculeatum, *pulcherrimum*, Druery's *Gracillimum* and *pulcherrimum*, Green's *plumosum*, *divisilobum* Bland and a number of seedlings therefrom.

Among the *Lastreas* were *Ps. M. polydactyla* Wills, *Ps. M. cristata*, *F. M. linearis cristata*, *F. M. cristata* Bolton, *fluctuosa cristata* Troughton and others. *Blechnum spicant serratum* Smithies, *grandiceps*, Henwood and others.

Adiantum Capillus-Veneris imbricatum, *Asplenium Trichomanes cristatum*, *A. T. incisum Clementii* and *A. T. ramocristatum*.

The whole was admirably arranged, reflecting great credit upon the cultivator. Very few of the ferns were named, which somewhat detracted from the exhibit from an educational standpoint.

The Society's Gold Medal was unanimously awarded for this very meritorious exhibit.

W. B. CRANFIELD, F.L.S., V.M.H.,
President, B.P.S.

A NEW FERN.

Mr. R. Bolton received an award of merit from the Royal Horticultural Society on August 17th for a very charming aposporous seedling from *A. f. f. unco-glomeratum*, which was more ramose and finely divided than the parent.

It is to be hoped that it may remain constant, but like some other extreme forms, viz. the *pellucidum* section in *Polystichum angulare*, *Kelwayi densum* in *Phyllitis Scolopendrium*, and *Trichomanoides* in *Polypodium vulgare*, it may with age develop the defect of reversion.

Needless to add, these finely divided forms are only suitable for frame cultivation.

W. B. CRANFIELD, F.L.S., V.M.H.

FEEDING HARDY FERNS.

Wise, safe, and risky methods.

The majority of our members are experienced cultivators of ferns who require no instruction from me, but so often, when friends have seen my ferns in their full dress, the question has been asked, "What do you feed them on?" that I am daring to place my views on the subject before

readers in order that they may pull them to pieces, ruthlessly, if they wish, so long as they will offer alternatives from which we may all learn something.

Ferns, hardy or exotic, do not relish rank animal manure. That much I proved in the early days of my horticultural career, when I ruined a batch of several thousand market ferns by mixing cow and horse manure in the potting compost. I have since witnessed the torture and piecemeal murder of a plantation of hardy ferns which a gardener of the know-all type insisted, despite all advice, upon planting in richly manured soil. Whilst my opinion is that they dislike rank manure such as we use in the preparation of rose beds and herbaceous borders, I would say that hardy ferns positively loathe and hate compound fertilizers if applied in the manner usually adopted in the feeding of flowering plants.

I am well aware that it is possible, when a fern in a pot has filled the receptacle with roots, to compel it to produce extremely large fronds by gorging it with fertilizers diluted in water. When engaged in the commercial production of ferns to be sold in Covent Garden I had to use these stimulants by the hundredweight, but quick clearance when a batch of plants reached its zenith was compulsory, sometimes at heavily reduced prices. Why? Simply because it was well known at the nursery that they would soon be but lumber occupying space.

Thus far, it doubtless appears to the reader that my idea of feeding ferns is to starve them, but no; I want rather to urge that in dealing with hardy ferns dieting is a matter for careful consideration, and is very different from cramming, choking or giving one's plants dyspepsia. Ferns, like most plants, require potash, nitrogen and phosphates, but the proportions of these which will make a well-balanced food for ferns is not on all fours with the perfect blends for a dahlia, chrysanthemum or an onion. Long before I learned of the existence of the British Pteridological Society I carried out a good many tests to ascertain the effect of various kinds

of foods upon various kinds of ferns, and here are some of my findings. *Scolopendriums* will assimilate and benefit from more liberal feeding than other kinds of ferns. They will make wonderful fronds if given light pepperings of a mixture consisting of two parts superphosphate of lime, one part sulphate of potash and one part sulphate of ammonia. *Athyriums* treated with the same mixture grow rapidly out of character, and become gross and coarse. The fronds of *Polystichums* fed thus are prone to irregular development, but by using a weak liquid made alternately with nitrate of soda and muriate of potash—not more than a teaspoonful of either salt to the gallon of water—*Polystichums* may be made to produce great fronds, even in development and rich bright green. Personally, I would adopt this feeding only in the case of plants to be grown as specimens for a particular purpose, such as for exhibition, and I would not continue the diet for two successive years unless I was prepared to throw the plant away after the second year. *Polypodiums* will gain strength and substance from superphosphate, but sulphate of ammonia soon causes rotting of the rhizomes.

Blechnums seem to turn sick at anything in the chemical line, and *Asplenium Trichomanes* say no to anything richer than charcoal, from which there is little obtainable in the way of soluble food although it serves a useful purpose in keeping compost open and sweet. *Adiantums* make big fronds if fed with nitrate of soda, but the texture is soft and flabby, and the centres of the crowns are disposed to die after a season's production of lush growth.

If I were bent upon growing a dozen assorted ferns in pots to show in great form, my first step would be to mix some bone meal and crushed oyster or cockle shell with the potting soil. If the potting were done in August or September, plain water only would be given until the following April. Thenceforward one watering would be with very dilute nitrate of soda and the next equally weak muriate of potash.

In the open ground, where I want plants to make good steady growth and to retain health and vigour year after year, my plan is to dig in bone meal when preparing the site. Thereafter all the feeding done is to sprinkle old soot over the ground not more than once a year, and each winter to spread the ashes from a garden fire which has consumed a good deal of woody material. I do not object to a coating, half an inch thick, for it never seems to do any harm, and supplies potash in the forms ferns seem to relish.

Once in about three years I have thrown a few crystals of sulphate of iron around my *Lastreas* and *Polypodiums*, and the fronds stand longer and take on a darker tone of green. A dusting of one of the finely powdered limes once in a way is acceptable to the *Lastreas* (except *dilatata*), the *Polypodiums* and the *Scolopendriums*, and that about sums up feeding ferns so far as I am concerned. I know some people use Blank's celebrated fertilizers according to the instructions on the tin, and I know they can boast about the length and breadth of fronds produced, but they also have frequent reason to complain that this plant or that was grand last year, but something has gone wrong with it and it looks like going home.

Occasionally I have had a *Polystichum* or a *Scolopendrium* which has gone hard and stubborn in the crown, refusing to send up new fronds. A drenching with water in which sulphate of ammonia, $\frac{1}{2}$ oz. to the gallon, has been dissolved for six hours or more has been given, and growth has soon broken away, but having achieved that much no more has been given ; it is all right to give a gentle fillip, but all wrong to whip and goad to second exhaustion.

A. J. MACSELF.

THE USE OF CLOCHES.

A difficulty, which others may have shared, has always been to bring on young seedling ferns which have reached the stage of hardening off but are too small to plant out in unprotected open ground ; a cold frame seems suitable, but has the disadvantage that watering may be needed, and more so if the seedlings are in pots or pans.

This spring and summer, largely owing to the kindness of our late Secretary, a considerable number of tiny plants were on hand ; and so Chase cloches were tried, which makes it possible to use open ground, to do away with nearly all watering, and still give ample protection, with fresh air in plenty ; a shady corner, on a very slight slope, with a forking over of the soil first to clear out weeds and large stones and to loosen the subsoil, is all the preparation needed, unless a small amount of leaf-mould be advisable when the forking is being done.

A final rake-over to make the surface even, and then the cloche is put together and set on the ground, and the area covered by it is marked ; this is necessary, as planting should begin two or three inches from the lines made by the two edges of the glass, where they rest on the ground. Otherwise the plants will touch the glass and, if damp, will suffer.

Planting is done just after a light fall of rain, which will soak into but will not beat down or disturb the loosened soil. It is surprising how many seedlings go, in rows, under even the small cloche ; and no further attention is required for some time—a week perhaps if dry days come, a fortnight if there is more rain. Unless the soil is very stiff, the rain falling on the higher side of the cloche soaks under the glass edge and goes downwards to the plants ; and watering can be done in this way, though if really wanted it is better to lift the cloche and water very gently, with a disused feeding-cup, between the rows.

Growth is quite astonishing, especially in the large and stronger kinds, such as *Lastrea*, and by the autumn it will be possible to take away the cloche.

The same plan can be used for full-grown ferns ; a " frame " consisting of four sides was made, sufficiently big to contain a young but fair-sized *A. f. f. kalothrix* ; a large cloche was set on top of this frame, the fern being in the open soil below ; and new fronds were put up one after another throughout the summer.

As might be expected, small species, such as *Asplenium*, do not succeed so well with this treatment, and its use with them is not advised. E. A. ELLIOT.

VARIATION IN FERNS.

The term " variety " to-day stands for something among fern-growers rather more narrow and closely defined than it did in earlier days ; it brings before the present-day enthusiast a mental picture of a crested or plumose or forked form ; but there were other departures from the normal of a much more minor nature which did at one time receive recognition, and which are perhaps more likely to occur still in the wild state, though equally likely to be ignored now ; it was the discovery of one of these this year which prompts this note, particularly because of the attention given to it in Moore's ' British Ferns ', octavo edition, the plant being *A. f. f. rhaeticum*.

Some years ago I found *incisum* of the same species, and quite recently a form which the late Editor thought may be *dentatum* of Hoffmann when more fully mature, but with the warning that the Lady Fern is protean as regards the cutting of the pinnules. It was no doubt failure to realize this which led to the listing of a number of forms as genuine varieties ; it has even been said that no two *Athyrium* plants are alike in their pinnules, and although this is an exaggeration, it

does show the diversity of appearance assumed by this fern ; anyone in search of a minor subject of study might find it of interest to catalogue and analyse the forms met with in a period of a few years, noticing also the differences to be met with in *Lastrea filix-mas*, which varies considerably, too, in the same way.

It will soon be found that if the forms, or even groups of forms, were admitted as varietal, we should have innumerable names with descriptions attached which would be hard to follow ; but as a bit of actual field work, observation of types can prove a distinctly interesting pursuit ; and a good deal of interest can be had by those who do not want to make a collection of pressed dry fronds, but would like a visible record of the various " cutting " or outlines already referred to, which can easily be obtained by making photographic prints.

Examples of this have been shown in the GAZETTE by the late M. Kestner, who treated entire small fronds in this way ; but for records a single pinnule will suffice, and it is now possible to make one's own printing-paper, so that a slip can be cut, of ordinary paper, to suit the size of the pinnule, and then be converted by the new process in order to make the print. By this means any probable waste of the usual ready-made printing-paper can be avoided ; materials for " home use " can be obtained from a well-known Oxford photographic firm, and are simplicity itself to use, and very effective.

E. A. ELLIOT.

FERNS IN THE DAUPHINÉ ALPS.

The Dauphiné Alps are noted for flowers, but information about their ferns appears to be scanty.

A good deal of the rock is limestone. Water sinks in at a high level and the sides of the deeply-cut valleys are very dry. So few are the streams that fall into the valleys that the hot and weary traveller cannot sufficiently slake his

thirst. The main stream down the valley is usually derived from glaciers, and is not good for drinking. It will be evident that, generally speaking, among these mountains ferns are scarce.

The following notes refer to the western side of the main mountain group, which is penetrated by two river valleys rising from about 2500 ft. to 6000 ft. At the lower height there are mixed woods and fairly lush vegetation. Here there is a considerable number of fern species, although none is plentiful. Those seen include *Polypodium vulgare*, *P. calcareum*, *P. Phegopteris*, *P. Dryopteris*, *Lastrea Filix-mas*, *Athyrium* (sparingly), *Polystichum aculeatum* (still more sparingly), *Asplenium Trichomanes*, *A. viride* (scarce), *A. septentrionale* (no *germanicum* could be found), *A. Ruta muraria*, *A. Halleri*, *Cystopteris fragilis* and *C. montana*. *C. montana* was in places growing in considerable quantity and under drier conditions than would perhaps be expected. *L. montana* and *P. angulare* were not seen.

As higher and more exposed regions are reached, few ferns are found. *Botrychium* is common in alpine meadows, and *P. lonchitis*, though not plentiful, is well spread about. One plant of *lonchitis* was found in coarse scree at a height of 8500 ft. below the majestic crags of Les Ecrins (13,500 ft.), the highest mountain of the group. *Cystopteris fragilis*, too, covers a considerable range of altitude. At its higher limit (some 7000 ft., so far as observation went) it simulates the fresh green and broader pinnules of *C. alpina*, but on examination will not pass the botanical tests for that fern, which was not found. *Asplenium viride* was exceedingly scarce, but it was interesting to note that a plant found at 7000 ft. was of the same colour and toughness as *A. viride plumosum* found at about the same height in the Swiss Alps. *Allosorus* occurs here and there, doubtless where no lime is present. The only lucky find was *Woodsia hyperborea* (or *alpina*). There were but a few plants—at a distance closely resembling a lousewort, with which they were mixed up—observed

during a trek through an upland valley at 6000 ft. They were all in a space of a few yards and were probably growing on a vein of intrusive rock. P. GREENFIELD.

PLANTS AND SPORES FOR DISPOSAL.

The Rev. E. A. Elliot has a number of sporelings of *Lastrea dilatata Boydii*, raised by the late Dr. Stansfield, which he will be pleased to give to anyone interested in them.

The Editor has a number of spores of foreign ferns, mostly stove species, which he will send to anyone who would like to attempt to raise them.

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Atkinson, F., Lake Side Cottage, Keswick, Cumberland.

Bigland, J. W. S., 20, Parkfield Road, Bebington, Birkenhead, Cheshire.
Blow, Thomas Bates, F.L.S., The Chalet, Welwyn, Herts.
Bolton, Robert, F.R.H.S., Birdbrook, Halstead, Essex.
Bolton, Mrs. Robert, Birdbrook, Halstead, Essex.
Bolton, Thomas Henry, F.R.H.S., Birdbrook, Halstead, Essex.
Bowles, E. A., M.A., F.L.S., F.Z.S., V.M.H., Myddleton House, Waltham Cross, Herts.
British Museum, The (Natural History), Cromwell Road, London, S.W. 7.
Brookfield, John, Nurseryman, Stamford Road, Birkdale, Southport, Lancs.
Brown, Mrs. Deborah, Clifton, Warren Road, Donaghadee, Belfast.
Burton, Frank, The Bailey House, Hildenborough, Kent.
California, University of (The Library), Berkeley, California, U.S.A.
Churcher, Major G., F.R.H.S., Beckworth, Lindfield, Sussex.
Cochran, John, 5½, Nursery Street, Kilmarnock, Ayrshire.
Cordrey, C., 151, Bedfont Lane, Feltham, Middlesex.
Coverdale, W. H., West Lodge, Ripon, Yorks.
Cowan, Alexander (Provost), Valleyfield House, Penicuik, Midlothian, Scotland.
Cranfield, W. B., F.L.S., V.M.H., East Lodge, Enfield Chase, Middlesex.
Darlington, H. R., M.A., LL.M., F.L.S., Park House, Potters Bar, Middlesex.
Davies, W. T., Gwyndre, Port Dinorwic, Caernarvonshire.
Dempster, R., Carresden, Dumfries, Scotland.
Dixon, J. Dargue, Lyvennet, Coastal Road, Hest Bank, Lancaster.
Dunston, Captain Ambrose, Burltons, Donhead St. Mary, Shaftesbury, Dorset.
Dyce, James W., Kinermorey, 31, Mayfair Gardens, Woodford Green, Essex.
Dyson, R. J., Overcourt, Bisley, Stroud, Glos.
Elliot, Rev. E. A., M.A., The Vicarage, South Stoke, Reading, Berks.
Elton, C., 3, Stirling Road, Enfield, Middlesex.
Fletcher, B., J.P., The Yews, East Hagbourne, Didcot, Berks.
Gordon, Alfred, The Elms, Ringmer, Lewes, Sussex.
Greenfield, Percy, Beech Bank, Stuart Road, Warlingham, Whyteleafe, Surrey.
Grotrian, Frederick, Branksome Dene, Westbourne, Bournemouth, Hants.
Grubb, C. W., Brookfield Nursery, Bolton-le-Sands, Carnforth, Lancs.
Hall, Alva J., Victoria Nursery, Victoria Road, Harrogate, Yorks.
Hanbury, Frederick J., F.L.S., Brockhurst, East Grinstead, Sussex.
Hawker, Captain H. G., Strood, Ermington, Devon.
Hawkings, George, Cressy House, Goldhawk Road, London, W. 12.
Hollings, Frederick, 37, Garbett Street, Accrington, Lancs.
Horticultural Society, The Royal, Vincent Square, Westminster, S.W. 1.
Jackman, G., & Son, Nurseries, Woking, Surrey.
Kaye, Reginald, Waithman Hardy Plant Nursery, Silverdale, Lancs.
Kentucky University, Dept. of Botany, Lexington, Kentucky, U.S.A.

Knox, Major-General Sir Alfred, K.C.B., C.M.G., M.P., Binfield House, Binfield, Bracknell, Berks.
Laurie, G. F., Laurel Villa, Kenmure Avenue, Bishopbriggs, Glasgow.
Lawson, G. C., Mayfield House, Ashbourne, Derbyshire.
Leak, G. W., 1, Clapham Avenue, Wisbech, Cambs.
Lloyd, Joseph, 4, Richmond Road, Birkdale, Southport, Lancs.
Lovelady, John, 129, Manchester Road, Haslingden, Lancs.
Lyle, Neil C., The Gardens, Donibristle Park, Inverkeithing, Fife.
Macself, A. J. (Editor, *Amateur Gardening*), 114, Hamilton Road, Reading, Berks.
Macwatt, Dr. John, Morelands, Duns, Berwickshire, Scotland.
Manton, Miss Irene, B.A., Ph.D., Dept. Botany, Victoria University, Manchester.
Mardell, Alfred, East Lodge Gardens, Enfield Chase, Middlesex.
Marsh, Miss S. A., Glenlyon, Holywood, Belfast.
Meade, Joseph, Old Connaught, Bray, co. Wicklow, Irish Free State.
Monro, George, C.B.E., The Red House, Hendon Road, Church End, Finchley, London, N. 3.
Moore, Rev. Canon H. Kingsmill, D.D., F.L.S., Cedar Mount, Dundrum, co. Dublin, Ireland.
Musgrave, C. T., F.R.H.S., V.M.H., Hascombe Place, Godalming, Surrey.
Naylor, E., Corner Garth, Leadhall Lane, Lucas Road, Harrogate, Yorks.
Oliver, Arthur, Tower Road, Darnick, Melrose, Roxburghshire, Scotland.
Parkinson, J. J., The Lodge, East Lodge Gardens, Enfield Chase, Middlesex.
Perry, Amos, F.R.H.S., The Nurseries, Enfield, Middlesex.
Phillips, Hugh, High Elms, Hitchin, Herts.
Pyke, Arthur, 10, Hanover Terrace, N.W. 1, and Westwoods, Windlesham, Surrey.
Ransom, R. F., Wymondley Bury, Hitchin, Herts.
Reeves, Hugh, Gillingham, Hartfield, Sussex.
Reuthe, G., F.R.H.S., Foxhill Nursery, Keston, Kent.
Rowlands, Dr. S. P., M.B., B.S., Abbeville, 42*a*, Beckett Road, Doncaster, Yorks.
Rugg, H. G., Dartmouth College Library, Hanover, New Hampshire, U.S.A.
Russell, L. A., Richmond, Surrey.
Saorstát Éirann, Stationery Office, Publications Branch, Dublin.
Sheldon, J. J., Monkhams, Lower Road, Great Bookham, Leatherhead, Surrey.
Sherrin, W. R., A.L.S., South London Botanical Institute, 323, Norwood Road, London, S.E. 24.
Sinclair, James A., 57, Stradella Road, Herne Hill, S.E. 24, and 3, Whitehall, S.W. 1.
Smith, Ewart G., 147–151, High Street, Christchurch, New Zealand.
Smithers, Major A., Morleys, Great Hallingbury, Bishop's Stortford, Herts.
Stansfield, Tom, M.B., B.S., 120, Oxford Road, Reading, Berks.

Stephens, Edward J., Rose Lawn, Digwell, Welwyn, Herts.
Stephens, G. E., 36, Bedford Road, Horsham, Sussex.
Stormonth, John, Nurseryman, Kirkbride, Carlisle, Cumberland.
Sudell, Richard, F.I.L.A., A.R.H.S., 4, Bedford Square, London, W.C. 1.
de Tavel, Dr. F., 22, Schosshaldenstrasse, Bern, Switzerland.
Taylor, Miss Jean, Lily Hill Nursery, Bracknell, Berks.
Thorrington, Francis W., Fern Dell, Luscombe Road, Paignton, Devon.
Thorrington, Mrs., Fern Dell, Luscombe Road, Paignton, Devon.
Trotter, P. D., Leith Vale, Ockley, Surrey.
Warren, James, Flat 2, 13, Bruton Street, London, W. 1.
Weiss, Professor F. E., F.R.S., F.L.S., Easedale, Woodway, Merrow, Guildford, Surrey.
Westley, Edwin, 2865, Nina Street, Lamanda Park, Pasadena, California, U.S.A.
Whiteside, R., 51, Borrowdale Road, Lancaster.
Wilding, Ernest, Wexham Place, Stoke Poges, Slough, Bucks.
Williams, J. C., Caerhays Castle, Gorran, Cornwall.
Wiper, Ernest, 726½, Yates Street, Victoria, B.C., Canada.
Wynch, Mrs. Violet A., F.R.H.S., Pine Hill, Camberley, Surrey.

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THE BRITISH PTERIDOLOGICAL SOCIETY

THE SOCIETY originated, in September, 1891, in the Lake District with headquarters at Kendal. Its members were, however, distributed throughout Great Britain and Ireland, whilst some few reside in the Dominions and U.S.A. Its objects are :

(i) The Study of Species and Varieties of British Ferns.

(ii) The Recording of Information with regard to Ferns generally.

(iii) The Exchange of Plants and Spores between Members.

(iv) The Organization of Field Meetings to Search for Ferns.

The British Fern Gazette was established in September, 1909, publication being quarterly until the commencement of the war. After the war publication was restricted to two issues per annum on account of the increased cost of printing and the decrease in the number of members.

Members are invited to communicate with the Editor on subjects of interest with regard to British Ferns. Fronds may be sent to the Editor to be identified or named at any time.

Certificates are awarded to new ferns of distinction of which plants or characteristic fronds are shown at the Annual Meeting for adjudication. The Annual Meeting is held, when possible, at some place where ferns are abundant and from which excursions for fern hunting can conveniently be arranged. These excursions are an important feature of the Society's activity.

A Sub-Committee of the Society undertook a few years ago the correct naming of the National Collection at Kew, and, in conference with the Director and staff, planned and arranged the present fernery, supplementing the collection with gifts of plants from the ferneries of some of the members. The collection in the Royal Horticultural Society's Garden at Wisley was similarly dealt with and augmented.

The Society is affiliated to the Royal Horticultural Society, which is also an individual subscriber to its funds.

The Society is endeavouring to increase its membership and, through this and by other means, to encourage the more general cultivation of the varieties of British ferns. Any lover of horticulture is eligible for membership and the subscription is 10*s*. per annum (due in advance, at or immediately after the Annual Meeting), which entitles members to copies of the *Gazette*.

The Hon. Treasurer will be pleased to supply members who may desire it with Bankers' Orders for the convenient payment of subscriptions.

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VOL. VII. No. 5.

The British Fern Gazette

July, 1938

EDITED BY

A. H. G. ALSTON, B.A., F.L.S.

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President: Mr. W. B. Cranfield, F.R.H.S., V.M.H., F.L.S., East Lodge, Enfield Chase, Middlesex.

Hon. Secretary: Mr. P. Greenfield, Beech Bank, Stuart Road, Warlingham, Whyteleafe, Surrey.

Hon. Treasurer: Mr. J. J. Sheldon, F.L.S., "Monkhams", Lower Road, Great Bookham, Leatherhead, Surrey.

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Polystichum aculeatum gracillimum. Cranfield's No. 3.

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THE ANNUAL MEETING.

THE Annual Meeting will be held at the Kendal Hotel, Highgate, Kendal, Westmorland, on Monday, July 18th. Members intending to stay at the Hotel should make early application to the manager, Mr. F. Smith Milne.

It is hoped that as many members as possible will arrive at Kendal by Saturday, July 16th, so that the district may be thoroughly searched for varieties. Mr. R. Whiteside and other members who know the district well will advise as to the best spots to be visited. The area has produced many good things in the past ; it has not been hunted to any great extent of late years—at any rate by the Society ; and it is reasonable to assume that it contains much hidden treasure awaiting discovery.

AUG 1938

AN AWARD OF MERIT.

An award of Merit was conferred on *Athyrium Filix-fœmina unco-glomeratum* when exhibited by Mr. Robert Bolton on August 17th, 1937.

This remarkable variety was raised by Messrs. Stansfield at Sale from *acrocladon*, and is probably the most wonderfully divided *Athyrium* extant. It can readily be increased by apospory in the usual manner. It is of too delicate structure to be grown to perfection in the open fernery unless in a very sheltered situation, but will flourish in a cold frame and is an admirable companion to *Scolopendrium vulgare Kelwayi densum*, which partakes of a similar extremely divided character.

At the same time another little gem, *Athyrium Filix-fœmina velutinum* was raised by Messrs. Stansfield from the same parentage. W. B. CRANFIELD, V.M.H.

We offer very sincere congratulations to Mr. Robert Bolton on the award by the Council of the Royal Horticultural Society of the Lawrence Medal for his magnificent display of British Ferns at the Royal Horticultural Society's Hall in Greycoat Street, Westminster, on August 17th, 1937.

The medal is awarded annually for the most meritorious group of plants exhibited at any of the Society's fortnightly meetings during the year. It is a very high honour to be bestowed upon the cult of British Ferns, and a personal triumph for Mr. R. Bolton (probably better known to the general public from his association with sweet peas), who is not only a skilled cultivator, but a persistent hunter and raiser, and one of the most enthusiastic and loyal members of our Society. W. B. C.

A LINK WITH THE PAST.

It was when looking through some correspondence with the late C. T. Druery that I recalled a visit to the Zoological

Gardens at Clifton in the summer of 1909, where a large collection of the older varietal forms of British Ferns were deposited by the late Col. Jones and Dr. Fox of Bridlington. The collection had long been under the care of the late Mr. Harris, who was in charge of the Gardens and who presented the writer with his " ewe lamb ", one of the most remarkable variegated *Polystichum angulare* which he had raised ; but that is another story.

The name of the late Col. Jones is immortalized as the raiser in collaboration with the late Dr. Fox of the Plumose divisilobe section in *Polystichum angulare* of which *Baldwinii*, *esplan.*, *densum*, *laxum*, *robustum*, *Grimmondii* are examples, and if that were insufficient that Queen of *Athyrium*, *Filix-fœmina* " *clarissima* ", would of itself suffice, though Col. Jones was not the actual finder.

The late Col. Jones distributed several series of nature prints prepared from actual fronds, accompanied by notes and records of great value to all fern-growers. On the occasion of our visit Miss Jones informed us that a large number of these prints were still in a lumber-room, where they have remained until the present time.

Through the good offices of a nephew stationed at Bristol I was enabled to get in touch with Miss Jones, who is now engaged in philanthropic work in London. She informed me that her sister and aunt were both dead, that the ferns, of which they had a good number, had been given to friends, and that she was giving up her house at Clifton during this summer.

I have asked her to keep any old correspondence she might find and to hand over the nature prints to the British Pteridological Society for distribution to societies and our members. This she has promised to do and I have offered to help in any way possible. It would appear that there is a prospect of some of the nature prints being available, in which case a further announcement will appear in the GAZETTE.

W. B. CRANFIELD, V.M.H.

THE NITESCENS GROUP OF POLYSTICHUM ANGULARE.

This is one of the most attractive sections into which this fern has branched. They all possess the same general character—extremely finely divided pinnæ, prostrate or semi-prostrate fronds, which when unfolding in the early stages the pinnae hang like frosted silver bells. Some are copiously proliferous, which presents a ready method of increase. All are of great beauty.

The original *nitescens* was raised by the late Col. Jones from a sowing of spores of Padley's *tripinnatum*, now a very rare fern. In the same batch were *divisilobum tentile*, *divisilobum quadripinnatum*, *divisilobum elegans* and *divisilobum plenum*. From the original *nitescens* Messrs. Stansfield of Sale raised several forms, *elegans* and *densum* being the best, the names denoting the character.

From *densum* I raised *kalon*, which is the finest divided of all, and from the original *nitescens*, *nitescens grande*, which is a much more robust form with a spread of fronds of 4 ft. but not so finely divided as the others.

This section is a striking example of what may be accomplished by raising from a wild plant, and should encourage others to raise from other wild finds. In case any member should desire to raise spores from any of the varieties enumerated, I should be very pleased to send them a supply if they will communicate with me about midsummer.

W. B. CRANFIELD, V.M.H.

FERN HUNTING.

Whilst it is a truism that a few hours spent in a Fern Nursery where sporelings are raised in thousands may yield more worth-while varieties than many days' hunting extending over a lifetime, it must be remembered that it is entirely owing to the efforts of fern hunters that we owe the beautiful varieties now installed in collections.

Many wild finds themselves constitute some of the elite, to mention a few only, which have fallen to the vasculum of Fern hunters. In *Athyrium Filix-fœmina Victoriæ*, *clarissima* Wills, Barnes and the Axminster *plumosums*, *divaricatum*, *congestum minus*, *Frizelliae*, *kalothrix*, Elworthy's and the numerous other *cristatums*.

Amongst varieties of *Lastrea montana* are Dr. Stansfield's and Barnes's *plumosum*, Druery's *cristata gracile*, Wiper's *filifera* and Barnes's *coronans*. In *Filix-mas*, *Bolandae*, *cristata* of Ellacombe and Martindale, *lux-lunae*, the beautifully variegated form found in Yorkshire.

In *pseudo-mas*, *cristata*, the King of the Male Ferns, Wills and Dadd's *polydactyla* and *pinderii*; in *propinqua*, *cristata* of Barnes, Gott and Coward and *gracile* of Foster.

The various forms of *crispum* in *Phyllitis Scolopendrium* should arouse enthusiasm, whilst the *cambricum* section in *Polypodium vulgare*, all of which with many others have been found as wildlings—in fact nearly every species has yielded up prizes, the foregoing being but a few which have fallen to the hands of diligent fern hunters in the past.

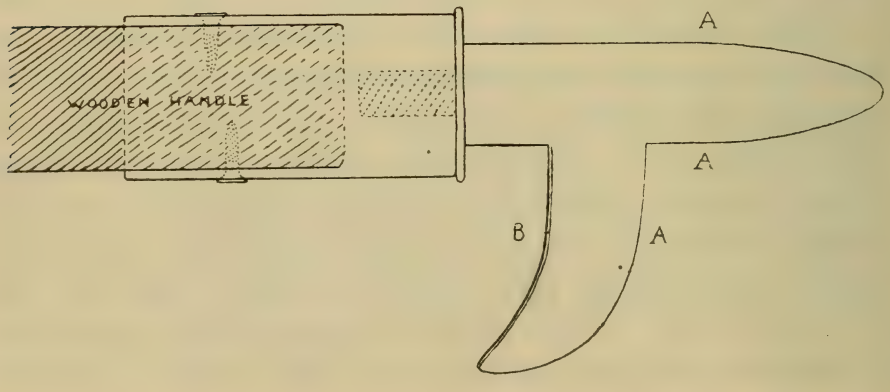
There are few essentials to successful fern hunting. The most important is concentration. Alien subjects may be discussed in intervals of rest and refreshment. It is necessary to cultivate an eye for form, which enables one to detect variation in very young plants which present greater possibilities; a large plant of any marked variety is unlikely to escape attention. Experience will prove that there is little to be gained by hunting in inaccessible places, or where the ground is closely covered by normal forms of luxuriant growth. Very few spores can germinate amongst the dense growth of robust normals, and varieties, being often less vigorous stand little chance of survival. It is of course always worth while giving a look over such groups, but the labour involved in climbing difficult places as a rule may be more profitably expended in thoroughly hunting the outskirts of such situations, old and damp walls, roadside hedgerows and ditches, which can be examined without undue exertion and present the greatest

*

possibilities. It is always worth while looking over the walls of farm buildings, roadside cottages and in villages where ferns abound, and where as a rule no account is taken of anything so common as a fern by local inhabitants. Many are the prizes which have been secured in the heart of towns and villages in such situations. I found two very good *Scolopendriums crispum* on a garden wall in St. John's Road, Ryde, I. of W.

Fern hunting to-day is a much less strenuous affair than it was thirty or forty years ago, when everything had to be transported on one's shoulders the day through, sometimes for long distances and in all weathers. The advent of the motor car in which all impedimenta can be carried renders hunters independent of distance and the existence of inns, whilst an enclosed car affords complete protection in bad weather. Moreover it is practicable to visit spots some miles apart when desirable.

The equipment desirable is a simple matter: a vasculum for small ferns, a few sheets of brown paper, some soft string, some tie-on labels, and some sphagnum moss to wrap round the roots of any ferns collected to ensure moisture. The fronds should always be preserved undamaged when possible, and protected against sun and wind. Ferns with fronds intact will rapidly recover the shock of removal. Some folks are content to carry a trowel for the removal of specimens, but the ordinary article of commerce sold under the name is a mere toy and is quite useless for the removal of large specimens. One of our Northern members presented me with a trowel with a flat



handle as wide as the blade which is the best I have met with, but the late Mr. Smithies designed a tool which is far better than any trowel; it consists of an instrument shaped as shown in the sketch. The blade is screwed into a brass socket, which is securely fixed to the end of a stout oak furze or other strong stick having a crook handle. It has cutting edges at A and flat at B. With this almost any plant can be removed, and if well made will last a lifetime. Moreover, it is an excellent protection against the unwelcome attention of dogs, and once stood me in very good stead in an encounter with an angry bull; but that is another story.

Any of our members desirous of embarking on this healthful and inexpensive pursuit should make a point of joining the fern hunting organized by the Society following the Annual Meeting. Not only are these meetings pleasant excursions, but the exchange of experiences and the examination of a number of fern fronds which are usually available are sources of education and perennial enjoyment.

W. B. CRANFIELD, V.M.H.

BRITISH FERNS AT SOUTHPORT.

In spite of the trophy offered by our Society and the liberal cash prizes provided in the schedule, the quality of the exhibits in the various classes was very disappointing, and whilst a few choice varieties were shown, a large proportion comprised indifferent seedlings.

Many of the plants were out of condition, sun-scorched, under-developed, and in hardly any case was naming attempted. In one class the exhibitor was disqualified for showing a *Lastrea* as a *Polystichum*.

The principal class, which carried with it the British Pteridological Society's Trophy, was won by Mr. Lloyd, whose cave was very attractive, but like the other exhibits in this class was greatly overcrowded, for which reason it was practically impossible to identify many of the varieties.

Included in Mr. Lloyd's exhibit were well-grown specimens of various forms—*crispum*, *cristatum*, *grandiceps*, *sagittatum* in *Phyllitis scolopendrium*. In *Athyrium Filix-fœmina*, *clarissima* (aposporous seedling), *gracile polydactyla*, *Frizellæ*, *setigerum*, *Victoriæ*, Horsfall's *plumosum*, *crispatum* and a number of seedlings, *Lastrea pseudo-mas cristata*, *L. Filix-mas polydactyla* Dadd's *Polystichum aculeatum pulcherrimum* (Bevis), various seedlings of *Polystichum angulare* in *divisilobe* and *acutilobe* sections, *Polypodium vulgare cambricum*, *Asplenium Adiantum-nigrum*, *Adiantum Capillus-Veneris*, etc.

The second prize was awarded to Mr. Brookfield for a somewhat similar selection, with some nice seedlings from Druery's *superbum* strain of *Athyrium Filix-fœmina*.

Mr. Grubb was third with much the same selection of varieties.

As masses of fern frondage the exhibits were pleasing enough, but save in a few instances it was quite impossible to observe the characters of individual plants.

In the class for 12 British Ferns Mr. C. Grubb was 1st, Mr. Askew 2nd.

For 6 Hardy British Ferns Mr. C. Grubb was 1st.

For 3 *Scolopendriums* Mr. Brookfield was 1st, Mr. C. Grubb 2nd, and Mr. J. Lloyd 3rd.

For 3 *Polypodium vulgare* Mr. Grubb was 1st, Mr. Askew 2nd, and Mr. J. R. Brookfield 3rd.

For 3 *Polystichums* Mr. C. Grubb was 1st, Mr. C. Lukin 2nd, and Mr. F. Askew 3rd.

For 3 *Athyriums* Mr. C. Grubb was 1st, Mr. C. Lukin 2nd.

For 6 Hardy British Ferns, 3 distinct varieties, Mr. Lukin was 1st, Mr. J. Gandy 2nd, and Mr. Grubb 3rd.

For 3 Hardy British Ferns, dissimilar, Mr. C. Lukin was 1st, Mr. C. Grubb 2nd, and Mr. J. Lloyd 3rd.

For 6 Hardy British Ferns, Mr. J. Askew was 1st, Mr. J. R. Brookfield 2nd, and Mr. C. Grubb 3rd.

The receptacles in which some of the plants—which had been lifted from the open ground—were shown were quite

unsuitable, and the quality of the exhibits far below the standard of former years. It is to be hoped that next year an improvement will take place, both in the number of exhibitors and the quality of the exhibits.

W. B. CRANFIELD, V.M.H.

DR. KESTNER'S METHOD OF RAISING HYBRID FERNS.

It is a great pity that Mr. Kestner did not publish more ample information about his growing of hybrid ferns than he did in the GAZETTE (vol. vii, No. 1, December, 1935, p. 19). While all the authors did not succeed in producing *Asplenium germanicum* from its parents, Mr. Kestner says there even, p. 22, that it is " easy to produce ", but did not give any account of this experiment.

To me he did not explain his technique, but he showed it to our friend Mr. E. Oberholzer in Samstagern, Zürich, who describes it in a letter to me as follows : " Mr. K. sowed the spores on small porous plates of porcelain-clay. He got them specially made, I don't know where, probably in one of his factories. After the sowing he sticked the plates into test-tubes, closed them by a cork and placed them on a stand so that the spores were turned to the light. On the bottom of the tube there was a little nutritious solution, which was slowly absorbed by the porous plate. In this way he obtained healthy prothalli. These he transferred on quartz-sand or on earth, either in larger tubes or in earthen dishes, which he covered by glass bells. To obtain hybrids he mingled mature prothalli of both parents in the same vessel, sprinkled them from time to time by a sprayer, and left it to chance whether the archegonia of one species would be fertilized by the antherozoids of the other. I do however not know how he managed to remove the prothalli from the porcelain plates without tearing their delicate roots."

F. VON TAVEL.

HYBRID DRYOPTERIS.

When I wrote in spring, 1935, to Mr. F. W. Stansfield on hybrid *Lastreas* I did not expect that this letter would be published. I spoke there (GAZETTE, vol. vi, No. 12, June, 1935), it is true, of four hybrids possible, but hardly distinguishable when dried in the herbarium. I mentioned that a friend of mine, Mr. Oberholzer, had found a fern different from *L. subalpina*, which might be a *L. Borreri* × *dilatata*. We called it *pro tem.* "*elata*" and a supposed *Borreri* × *spinulosa* "*nitens*". But further studies did not quite confirm our first supposition. The form of *Borreri* which grows in the neighbourhood of this *elata* proved to be apogamic and therefore unable to form hybrids, and the supposed *dilatata* turned out to be a large form rather of *spinulosa* than of *dilatata*. Besides, this hybrid produces amongst stunted spores also well-developed ones, able of germination. For the moment this fern is a puzzle to me; it needs further observation and culture to find out what it really is.

As things stand to-day I know only one real hybrid between *Dryopteris Borreri* and *dilatata:* it is *Dr. Boydii* which was repeatedly mentioned in the GAZETTE, expecially vol. vi, No. 11, December, 1934, p. 281.

In this article Mr. F. W. Stansfield states that the characters of *boydii* are very unstable: fronds of deltoid, or occasionally (as in my frond) sublanceolate outline; stem-scales having some trace of the dark median stripe of *dilatata*, or occasionally concolorous. Mr. Stansfield found the *indusia* deciduous like those of *filix-mas*, while in the frond I received from him they are more like those of *borreri*. In all the numerous specimens of *Dr. remota* in my herbarium I find the same fluctuation of characters. Of many specimens it is hardly possible to say whether they are true *remota* (*filix-mas spinulosa*) or *subalpina* (*filix-mas* × *dilatata*).

True *remota* seems to be very rare in Switzerland; I know of only one certain find of it. Dr. Christ says in his book,

'Die Farnkräuter der Schweiz', p. 138, to have found it amongst the parents in the surroundings of Basle, near Liestal.

Enclosed please find a differential diagnosis of *remota* and *subalpina* which I combined according to the description of Dr. Christ.

Dryopteris filix-mas × *dilatata* which in Switzerland is much more frequent, is generally considered as being identical with *Dr. remota* var. *subalpina* Borbàs. Prof. Luerssen for instance calls so the fronds which Mr. Woynar found near Rattenberg in Tyrol ('Ber. deutsche bot. Ges.', iv, No. 10, 1886, p. 422). But in this locality too there grow rather different forms, one of them being very near to *filix-mas*; it does not at all agree with the diagnosis of Borbàs, nor with that of *subalpina* which Mr. Walter gives for the form of the Vosges (GAZETTE, vol. vi, No. 11, December, 1934, p. 282).

Dryopteris.

filix-mas × *spinulosa.*	*filix-mas* × *dilatata.*
Frond proper (without stalk) 12 cm. broad and 50 cm. long	. Plant by one-half larger, frond proper relatively broader, 18–20/60 cm. Stalk firmer.
Pinnæ, especially the lower ones, distant from a broad basis elongated, triangular, short, 6 cm. long.	. Pinnæ less distant, the higher ones densely placed, at the basis less enlarged, the middle and higher ones longer, up to 12 cm.
Pinnules hardly 1 cm. long, 4–5 mm. broad, separated by very short intervals.	. Pinnules 1, 1½ up to 2 cm. long and ⅔ to 1 cm. broad, separated by distinct intervals.
Stem-scaless carce, unequal, *i. e.* larger ones of oval form and narrow-lanceolate ones mixed.	. Scales numerous, spreading, subulate, lanceolate, mingled with a few larger oval ones.
Scales pale, yellow brown	. Scales light or dark brown, without a distinct dark centre.
This is the plant Al. Braun found near Geroldsau in the Black Forest, and which was cultivated in the gardens of Freiburg, Carlsruhe, Strassburg and Leipzig.	. This is the plant Al. Braun found near Aachen and transplanted to the Berlin Gardens.

Polystichum aculeatum angulare is a hybrid fern which is rather difficult to be recognized. Mr. E. Walter goes in his latest study on the "Ferns of the Vogeso-Rhenane Region" ('Bull. de l'Association Philomathique d'Alsace et de Lorraine, Colmar', viii, No. 4, 1937) as far as to declare curtly all the varieties of *aculeatum* with stalked pinnules as being hybrids with *angulare*, although such forms are found in many places where to-day far and wide no trace of *angulare* does exist. With this assertion he goes evidently much too far.

I translate here the description which Dr. Christ gives of *P. aculeatum* × *angulare* ('Die Farnkräuter der Schweiz', p. 124, figs. 25 and 26) :

Texture about the same as that of *aculeatum*, more rigid than *angulare* and nearly winter-green. Scales often having the two different forms like those of *angulare*. Pinnules half as much larger than those of *angulare*, less numerous, 12 to 15 on each side below the only incised end, distinctly but broader stalked, the stalk less abruptly sparated from the basis of the pinnules than with *angulare*, more cuneate. Teeth more oval than in *aculeatum* and the auricle often deeply divided, with rigid spines. Sori numerous, about 6 on each side, small, not confluent, irregular, unequal, with few sporangia. Indusium stunted. In the lower part the frond is more like *angulare*, in the superior more like *aculeatum*, so far as the pinnules of the lower pinnæ are much divided and more distinctly stalked, of the superior pinnæ, however, narrower and less distinctly stalked.

There are several forms of this hybrid, some more approaching *angulare*, and especially its more divided varieties as var. *hastulatum* Ten. F. VON TAVEL.

ARE VARIETIES CAUSED BY ENVIRONMENT?

It is a fact of experience that some finds of ferns in their wild state have been of plants showing very well-marked

symmetrical variation, while others have shown, when found, only rudimentary differences from the normal; *Athyrium Filix-fœmina plumosum Axminster* and *Victoriæ* are instances of the former class, and in the other are more than one serrated *Blechnum*; the first group may be conveniently termed (A) and the second (B); from both of these good varietal forms have been raised, but the results from (B) have obviously taken longer to reach any excellence, as (A) finds are, so to speak, almost ready-made, and need only one or perhaps two further generations, under care, to attain perfect varietal development.

The question, however, may be asked, whether finds occurring as (A) are direct first generation descendants of normal plants; or whether there has been a previous generation, or series of generations, of the (B) type, overlooked by searchers for varieties, but leading up to the type found and here described as (A); and further, whether it may not be possible that, in certain species, the first variation is more likely to be of the (A) type; while in others the (B) type or something very near it is unavoidable as the start of the variation. For instance, *Polystichums* may vary, in two or even one generation, into (A), while *Blechnum* may need at least a rudimentary start; this is suggested as a supposition only, of course, not as a definite well-established fact; and can be represented by diagram thus:

Normal *Polystichum*—A^2—A^1—A or normal—A^1—(A),

Normal *Blechnum*—A^4—A^3—A^2—A^1—(A),

where A^1 up to A^4 are stages in detail of the group already referred to as (B), and, so far as actual finds are concerned, these stages are abbreviated by (as has been stated) the plant being discovered in some species as (A) and in others as (B), where (B) represents not more than A^2—A^1 in the long series of variation, and may even only represent A^1.

If this supposition is true, or contains any truth, that undiscovered stages of variation precede finds, and that

some species will usually have few, and some several stages, is there then any ecological meaning in this variation? And if so, in what form of variation? For two forms of variation seem distinguishable from one another, these being (1) the cases of cristation, brachiation, and so on; (2) ultra-division of pinnules, or in certain species of pinnæ, frondose variation coming under (1). It may be supposed that the shape taken by the leaf (in a fern, by the frond) has direct relation to the need of the plant to conserve moisture, or guard against excess of this; to receive light, or guard against excess; to regulate the effect of air; to withstand drought; in short, to deal with the many varying external stimuli that arise from environment, which are unavoidable owing to a plant's immobility.

The form of variation described above as (1) would appear to have somewhat indirect ecological significance; it is rather with (2) that we are now concerned.

To meet ecological conditions, that is, to turn external surroundings to the best use and advantage for its survival, a fern plant with large, comparatively erect fronds will need more divisions in its fronds than will a plant with fronds small and more or less procumbent; and any variation in a frond much divided will, it may be supposed, be in the direction of further division, or in the reduction in some form of existing divisions. Divisilobe *Polystichums*, on the one hand, and *Athyriums*, such as *Kalothrix*, *Frizelliæ* or *clarissima*, on the other, at once suggest themselves as examples; and in theory one may suppose that when variation appears in such fronds it will be at least very near (A) at its first appearance, since considerable division already exists.

A fern with more or less procumbent and smaller or shorter fronds will need less division, *e.g. Blechnum*, *Asplenium*, *Trichomanes*, *Scolopendrium*, and in many cases will show a tendency in variation rather towards cristation than to division, or when the latter occurs it will be of the (B) type; though the unorthodox suggestion may be made that the

fairly common wild *Scolopendrium* cristation is an effort to divide its frond. But whether this is so or not, the classification (A) and (B) as well as the contrast between large growing and small growing ferns is simply a matter of contrast or comparison ; all or nearly all ferns of our country have shown some capacity for excess growth and also for division beyond the normal. Is this an ecological action ? And if so, where is the response to the ecological factor or factors to be looked for ?

It has been noticed many times that finds of varietal form, growing wild, have most usually been made in isolated situations where the fern has been growing apart from some normal colony. This is not always the case ; the Whitewell *Lastrea montana* found by Dr. Stansfield was in the midst of many normal plants, and was, it may be noted, of the (B) type. But isolation has occurred so often that the fact suggests the influence of some ecological factor or factors not experienced by the normal colony ; the existence of a colony of some variety only means that one original variation has produced a number of descendants.

The previous statement that variation of excess vigour, cristation, or (1), is only of indirect ecological significance may need re-considering ; it may actually show the influence of an ecological factor not before noticed—that of the soil, or of soil contents, in which the plant grows ; as this, with the possible addition of certain other factors, has something to do with the luxuriance or stunting of normal plants ; it may also enter into the causes of variation.

These causes have been usually looked for in the varietal plant, and the ordinary suggestion is that physiological changes have taken place at the start of a new fern's life-cycle, resulting in variation : this arises from some unexplained alteration in physiological characteristics, and so is not likely to be solved by referring to the parent plant even when that is known—as, in wild finds, can hardly be likely, though in the case of cultivated plants, one which produces a

descendant with new features can of course come under the fullest observation.

It seems reasonable to suppose that once a plant has survived the dangers and attacks of its early days, and has grown to more or less maturity and become established, it will not be able to vary its own physical form to meet the external stimulus of any unusual ecological factor; though in the quite normal order of events some ferns, such as *Lastrea dilatata*, show a response to seasonal change of stimulus by putting up at least two forms of fronds each at a different time of year. But this is normal, and not due to an unexpected influence. The variation in response to stimulus will be, it is suggested, the parent's effort to produce in a descendant a new feature suited to counteract or to benefit from the stimulus which the parent has felt, but is itself unable to meet.

A British fern has two parts with which to deal with environment—the fronds and the roots : the frond deals with light, air, which includes wind and atmospheric moisture ; the root deals with soil and soil contents, and both frond and root are concerned with rainfall or drought. But since growth depends upon the root, it may be that when a disturbance occurs in the frond's work and some new response to stimulus is demanded of the frond, a call is involved upon root resources to furnish new means of meeting the situation. A suggestion has already been made as to the answer, but the point arises that it may be the root, quite as much as or more than the frond, which provides the initial step torwards the varietal form which ultimately occurs in the descendant. If this suggestion makes either or both frond and root appear to possess powers which it really cannot have, then the supposition might be considered that ecological factors acting upon a growing but immature plant produce in that plant variation, probably taking the (B) form in that case—that is, some quite rudimentary change.

Ecological factors are older than the oldest existing plant of any kind, and so any tendency to variation which may be caused by their influence must—if it exists at all—be now

inherent in plants, even when normal; and inward physiological changes, such as are usually presumed in varieties, may be looked on not as the cause of variation, but as going with it, and being part of the result of the external stimulus causing variation. E. A. ELLIOT.

RAISING NEW FERNS.

In E. J. Lowe's book, 'Fern Growing', there is an account of some of the early enthusiasts in creating and raising fern varieties; or perhaps it would now be safer to say, fern variations, since the word "varieties" generally seems to be used to-day to mean either species, or else forms of a species, at any rate by non-botanists. And amongst those pioneers our later Editor "The Doctor" is named and can most certainly be included, and was, one feels, the last of them all, though very far from being the least, since it has been chiefly his energy that has kept our Society going up to the present time.

However great an interest may be and is taken in the normal species of our British ferns, it is in the raising and cultivation of variations that we must find a reason for our continued existence as a society; and joined to that pursuit, a study that is rapidly becoming more and more established and important—the examination of the structure and internal growth of ferns.

The latter study is one that needs both special training and special apparatus; it is in the best hands, and we can feel confident that we shall be kept informed of the results obtained, and that in due course further specialists will arise to continue and extend this work. 'Fern Growing' was published over forty years ago, and even then it was found that variations were becoming rarer in a wild state, and hybridizing was becoming increasingly necessary in order to add to the ferns then under cultivation, or even to keep up the collections already made; and although "finds" are still brought home every year and

will no doubt always be procurable, it is to artificial methods that we have to turn to-day, and can do so not only with ease, but with a sense of justification, for every true fern enthusiast feels at one time or other a desire to possess a variation acquired by personal effort.

But, naturally, no one can make a start without some spores, and the suggestion is therefore put forward that every member who can do so this summer should collect as many spores as possible from any variation in our collections, and after carefully packeting and labelling them, should send the packet to some member chosen by the President, who will then distribute the packets to would-be raisers. Glazed white paper can be got from most stationers, and a piece about $4\frac{1}{2}$ by $3\frac{1}{2}$ in. folded in two, with the glazed side inward, makes a useful sized packet. When the spores are placed in the fold, the two side edges should be turned in and then the top turned down, so forming an envelope. A packet of this kind can be used to place pinnules in from which the spores are being obtained, and if desired the pinnules can remain inside when it is evident that spores are being shed.

It is probably best to mix together the two lots of spores from which a cross-fertilization is hoped for *before* the sowing is made. A few spores from one packet should be lifted, on a thin knife-blade tip, and placed on clean unused paper ; the blade tip should then be wiped, and used to lift the other spores, also in small quantity, and the packet, now containing a mixture, should be closed up and labelled, and everything is then ready for a sowing. In the June, 1932, GAZETTE, our late Editor gave a warning against unsuitable mixtures which will only produce freaks, and suggested or rather advised crossing *P. angulare divisilobum* with *perserratum*, *congestum* with *perserratum*, *Scolopendrium crispum* or *crispum fimbriatum* with *sagittato-projectum* ; and this is the only advice on this subject which the writer has been able to discover as having any value. The late Mr. C. T. Druery was quite non-commital, and the results obtained and figured in Lowe's ' Fern Growing ' can only in most cases serve to illustrate the warning against the production of oddities ; there is need here for many more

suggestions, from those of us who have already made varietal crossings, and plenty of room for more experiments.

Generally speaking, it seems that variations of strongly contrasted type should not be crossed, such as a *plumosum* with a *divisilobe*, or a polydactylous form with either of these; in *Scolopendrium* a laciniate variation may be considered a contrast to *spirale* or *undulatum*.

When the choice has been made, it is now a usual practice to sow the spores on sterilized soil, and there is little need for a detailed account of this procedure. Well-cleaned glass jars, of which the shallow potted meat type are examples, will be large enough for small sowings, while for larger sowing glass tongue jars are excellent, and a square of glass is placed on top and a label put on the outside of the jar, which should be half filled with a fairly stiff soil. This soil is previously sterilized by boiling, using distilled water, obtained very cheaply from a chemist, the boiling being repeated on each of three consecutive days, and the receptacle used being kept covered in the intervals to exclude dust. Propagation by spore-sowing is the necessary method for raising hybrids, or for increasing stocks of ferns which cannot be divided; but there are a number, particularly among the *Polystichums*, which produce bulbils, and new plants can usually be grown from these bulbils as offsets.

It is probably best to attempt this method out-of-doors, without moving the well-established plants from which increase is desired; the ground just round them should be levelled and the soil enriched with well-decayed leaf-mould and made fairly firm, and on this the fronds with bulbils are pegged down and the soil is kept just damp; it is often advisable to fix a piece of wire-netting a few inches above the frond to stop birds from disturbing the soil, and when the frond, from about half-way up the rachis to the tip, shows signs of age, to cut this off.

But do not lift the frond, once pegged, unless absolutely essential. The pegging down can be maintained for, say, twelve months, or until a rainy spell sets in *after* twelve months

has elapsed ; it will then be safe to examine the bulbils with a good hope of finding several are well rooted, when the frond can be severed (by a knife or by scissors, not by hand) and the bulbil-plants cut off separately to be grown on. It sometimes happens that a frond bearing bulbils is given us, or is found in a wild state, and there is no chance of securing the parent plant ; in this case, lay the frond on soil similar to that already described, in a box several inches deep, and peg down, covering all but the bulbils with a thin layer and keeping shaded and moist.

E. A. ELLIOT.

THE ORIGIN OF THE NAME OSMUNDA.

The etymology of *Osmunda* is extremely obscure. Prior (' Popular Names of British Plants ', p. 173) says : " Osmund, Osmund Royal, or Osmund the Waterman, apparently a corruption of G. *gross mond-kraut*, greater moon-wort, representing its ancient officinal name *lunaria major*. There are other derivations of it, such as that by Beckman, from the name of some person ; by Nemnich, on the authority of Houttuyn, from *os*, mouth, and *mundare*, cleanse ; by others from *os*, bone, and *mundare*, cleanse. The *Waterman* would seem to be its Flemish name, *Watervarn*. The *Royal* refers, we are told by Lobel (' Kruydb.', i, p. 991), to its great and excellent virtues ; but more probably to its stately habit. Osmunda regalis L."

Osmund as a proper name is said to be derived from two Saxon words, *os*, house, and *mund*, peace. The Oxford Dictionary says " of unknown origin ".

It seems most likely to have come from the old herbalists. The earliest reference that I have been able to find to it was in the ' Pandetarius ' of Mattias Sylvaticus. Sylvaticus lived in Italy in the latter part of the fourteenth century. He says that the plant grows in " paradises and gardens ", and that it

was another name for the *Pirgitis* of Dioscorides. The *Pirgitis* of Dioscorides was probably *Phyllitis Scolopendrium*.

In the older works the name appears in the form *Os mundi*. *Os mundi* appears to come from two Latin words, *os*, bone, *mundi*, genitive of *mundus*, "of the earth", meaning that the bone-like rhizome was found under the earth.

The old English name was Bonewort, in use about A.D. 1000, and applied to various plants with supposed bone-healing properties, among them the Royal Fern.

Osmund meant in Sweden, in early times, the unwelded small pieces of iron which were obtained by squeezing together with a sledge-hammer the lump of iron directly extracted from the ore, and cutting it with an axe into pieces, which pieces were commonly used as currency in the absence of the more precious metals.

The word appears in English works about 1280.

A. H. G. ALSTON.

REVIEWS.

Manual of Pteridology. By Fr. Verdoorn. Nijhoff, 1938.

This is an elaborate text-book intended for University students. It has sections on morphology, anatomy, mycorhiza, galls, cytology, genetics, chemistry, ecology, and classification, by a number of different authors, edited by Dr. Verdoorn. It is an extremely scholarly work and should be invaluable for reference.

American Ferns: How to Know, Grow and Use Them. By E. A. Roberts and J. R. Lawrence. Macmillan. Pp. viii + 98. 10*s*. 6*d*.

This work is of great interest to those who cultivate ferns, and contains certain features not previously stressed in any book on ferns. Especially notable is the chapter on How to Use Ferns. This has sections on "Indoor Use of Ferns",

" Ferns for Window-boxes ", " Ferns for Tray-gardens ", and also shows how to lay out fern-gardens, and how to use them on rock walls and in water-gardens. Another chapter deals with the propagation of ferns, and advocates a method of growing spores on a liquid medium which will be new to most growers in this country.

Quelques Maladies Nouvelles des Fougères. By Mlle. B. Aggéry. Toulouse : H. Basuyac & Cie. Pp. 201.

This scholarly work describes a number of new fern diseases, of which the following is a list :

Sphærella sobostiolica sp. nov. on *Polypodium vulgare*.

Homostegia polypodii sp. nov. on *Polypodium vulgare*.

Glœosporium Nicolai sp. nov. on *Scolopendrium vulgare*.

G. polypodii sp. nov. on *Polypodium vulgare* and *Polystichum aculeatum*.

There is also a chapter dealing with diseases caused by eel-worms and bacteria, and one dealing with the treatment of fern diseases. The book is well illustrated with coloured plates, and is of great interest to those taking a scientific interest in the diseases of ferns.

Dryopteris Borreri Newm. und ihr Formkreis. By F. von Tavel. In ' Verhandlung der Schweizer Naturforschender Gesellschaft ', 1937.

Dr. von Tavel gives an interesting list of the varieties of *D. Borreri*, and describes six new ones : var. *atlantica* from Madeira and Spain ; var. *insubrica* from Central Europe and Corsica ; and var. *melanothrix* from the Saar ; var. *pseudo-disjuncta*, var. *tenuis*, and var. *robusta*. Only var. *pumila* and *forma paleaceo-lobata* are credited to the British Isles.

A list of Varieties and Forms of the Ferns of Eastern North America. By C. A. Weatherby. Reprinted from the ' American Fern Journal '.

This list is of considerable interest for comparison with the British varieties. The most noticeable difference is the lack of " sports ". There are crested forms of *Cystopteris fragilis*,

Dryopteris marginalis, *D. thelypteris*, *Polystichum acrostichoides*, *Dennstædtia punctilobula*, and *Athyrium angustum*. No varieties are given for *Athyrium Filix-fœmina*.

Dr. Weatherby gives a definition of species and varieties which seems worth quoting : " Species, as here understood, differ from one another in two or more characters which experience has shown to be of importance in classification and which are stable. Thus, Goldie's fern and marginal shield fern differ constantly in texture, shape of pinnæ, position of sori and cellular structure of scales and indusium. Except for rare individuals which can reasonably be interpreted as hybrids, there are no intermediate forms. Therefore, these are good species—and are universally so considered. Varieties differ from one another in few characters of less importance and are connected by intermediate stages ; or they may differ by no more than one character, but have distinctive geographic ranges. *Osmunda cinnamomea* var. *glandulosa* departs from the typical form only in the presence of a glandular pubescence ; but whereas the latter is very widespread, the glandular strain occurs only in a restricted area near the coast in the eastern United States (Rhode Island to Mississippi). It is therefore regarded as a geographic variety (a concept very familiar to ornithologists). Forms differ in a single character of least importance (such as degree of cutting of the leaf), or are obvious abnormalities (such as *Onoclea sensibilis* f. *obtusilobata*), and may occur sporadically anywhere within the range of the species."

Dr. Weatherby's geographic varieties would be called subspecies by some authors.

Propagating Ferns. By W. Spawn. In ' Wild Flower ', August, 1937. Published by Wild Flower Preservation Society, 3740, Oliver Street, N.W. Washington, D.C.

Mr. Spawn has an article on growing ferns from spores. He suggests that spores should be raised on sterilized sphagnum or on a soil mixture of sand 40 per cent., peat moss 40 per cent. and wood charcoal 20 per cent., supplemented by Knudsen's solution. The author says that *Lycopodium* can easily be grown in pots from cuttings.

The Secretary would be glad to hear from any member who has for disposal any numbers of Vol. V of the GAZETTE (May, 1923–June, 1929).

FERNS AND THE GAZETTE FOR DISPOSAL.

The Rev. E. A. Elliot, South Stoke Vicarage, near Reading, has a few sporeling plants of a *Lastrea pseudo-mas crispata* to give away, preferably in the early autumn as they are still small. They come from a plant raised or found by the late Mr. Charles Henwood.

Mr. Elliot also has Vols. I, II, and V of the GAZETTE for sale at 6*s*. 6*d*. for the three, including postage.

ADLARD AND SON, LIMITED, 21, HART STREET, LONDON, W.C. 1.

THE BRITISH PTERIDOLOGICAL SOCIETY

THE SOCIETY originated, in September, 1891, in the Lake District with headquarters at Kendal. Its members were, however, distributed throughout Great Britain and Ireland, whilst some few reside in the Dominions and U.S.A. Its objects are :

(i) The Study of Species and Varieties of British Ferns.

(ii) The Recording of Information with regard to Ferns generally.

(iii) The Exchange of Plants and Spores between Members.

(iv) The Organization of Field Meetings to Search for Ferns.

The British Fern Gazette was established in September, 1909, publication being quarterly until the commencement of the war. After the war publication was restricted to two issues per annum on account of the increased cost of printing and the decrease in the number of members.

Members are invited to communicate with the Editor on subjects of interest with regard to British Ferns. Fronds may be sent to the Editor to be identified or named at any time.

Certificates are awarded to new ferns of distinction of which plants or characteristic fronds are shown at the Annual Meeting for adjudication. The Annual Meeting is held, when possible, at some place where ferns are abundant and from which excursions for fern hunting can conveniently be arranged. These excursions are an important feature of the Society's activity.

A Sub-Committee of the Society undertook a few years ago the correct naming of the National Collection at Kew, and, in conference with the Director and staff, planned and arranged the present fernery, supplementing the collection with gifts of plants from the ferneries of some of the members. The collection in the Royal Horticultural Society's Garden at Wisley was similarly dealt with and augmented.

The Society is affiliated to the Royal Horticultural Society, which is also an individual subscriber to its funds.

The Society is endeavouring to increase its membership and, through this and by other means, to encourage the more general cultivation of the varieties of British ferns. Any lover of horticulture is eligible for membership and the subscription is 10*s*. per annum (due in advance, at or immediately after the Annual Meeting), which entitles members to copies of the *Gazette*.

The Hon. Treasurer will be pleased to supply members who may desire it with Bankers' Orders for the convenient payment of subscriptions.

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A. H. G. ALSTON, B.A., F.L.S.

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President: Mr. W. B. Cranfield, F.R.H.S., V.M.H., F.L.S., East Lodge, Enfield Chase, Middlesex.

Hon. Secretary: Mr. P. Greenfield, Beech Bank, Stuart Road, Warlingham, Surrey.

Hon. Treasurer: Mr. T. Stansfield, M.B., F.L.S., 120, Oxford Road, Reading, Berks.

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FOREWORD.

THE frontispiece to this GAZETTE is a photograph of the obverse and reverse of the Medal struck to commemorate the late F. W. Stansfield, M.D., F.L.S., who, in addition to being one of the founders of the Society, was a past President and until his decease its Secretary, combining therewith on the death of the late Mr. C. T. Druery in 1917 the Editorship of the Society's GAZETTE.

The finding, raising and cultivation of British Ferns was a pursuit he followed with the greatest enthusiasm throughout his life. His voluminous writings display extraordinary versatility and deep research into the biological side of the cult, whilst his knowledge of varietal forms was unrivalled. The many fine ferns found and raised by the "Doctor" which were so freely shared with fellow members of the Society constitute a perennial testimony of his life's work.

JAN 23 1939

The medal now struck further to perpetuate his memory will, we believe, be regarded as a high honour by any recipient to whom it may be awarded.

Many subscriptions have been promised towards the cost of the medal, headed by an appropriate donation from the Society's funds. All members owe a great debt to the "Doctor" for his indefatigable work and generosity, and those who have not already done so are invited to send their subscriptions, however modest the amount, to the Hon. Secretary, by whom they will be acknowledged.

A list of the subscribers and the total amount subscribed will be published when the list is closed.

THE ANNUAL MEETING, 1938.

The Society held its Forty-third Annual Meeting at the Kendal Hotel, Kendal, Westmorland, on July 18th, 1938.

Members present were :

Mr. W. B. Cranfield (President) ;
Mr. A. H. G. Alston ;
Mr. W. F. Askew ;
Mr. T. B. Blow ;
Mr. W. H. Coverdale ;
Mr. J. D. Dixon ;
Mr. P. Greenfield ;
Mr. C. W. Grubb ;
Mr. R. Kaye ;
Miss I. Manton ;
Mr. J. A. Sinclair ;
Dr. T. Stansfield ;
Mr. R. Whiteside ;
Mr. W. Wilson.

Miss B. Colson attended as a visitor.

After welcoming the members, the President said that he had several matters of detail to put before the Meeting, and he thought that the minutes of the previous Meeting, which had been printed in the GAZETTE, might be taken as read. The minutes were then confirmed.

Letters were before the Meeting from Mr. Bolton, who was prevented from attending by a business engagement, from the Rev. Canon Kingsmill Moore, who sent some fronds, and from Mr. Harold G. Rugg, of Dartmouth College, Hanover, U.S.A.,who had intended to be present, but who, owing to illness (as the members learnt with regret), was unable to cross the Atlantic.

In his address, the President said, in regard to exhibition of ferns by members of the Society, that he would like to see more representative exhibits at the Southport Show. In London, at the Royal Horticultural Society's Hall, a large display of ferns had been put up by Mr. Robert Bolton, and had gained the highest award, *viz.* the Lawrence Gold Medal. He thought the Royal Horticultural Society would be prepared to encourage occasional displays of ferns, but before they were approached it would be necessary to have some assurance that there would be adequate support from the Pteridological Society.

It would interest members to know that a considerable number of the late Col. Jones's nature prints had been presented to the Society by Miss Jones and were in the hands of the Editor. They would be available to members, but as they needed sorting into complete sets, as far as possible, a small charge would be necessary to cover this and other expenses. This was a valuable acquisition, and he felt the Society would be paying a graceful compliment to Miss Jones if they had a complete set bound for her.

Now that they had seen the recently-issued number of the GAZETTE, members would no doubt agree that the Society could congratulate itself on the appointment of Mr. Alston

as Editor. Mr. Alston must be supported. He would particularly urge that members who have authentic information not already published about the early history of the finding or raising of the more important varieties should put it at Mr. Alston's disposal.

The President next said that he was sorry to announce that the Treasurer, Mr. J. J. Sheldon, had asked to be relieved of his office on the ground of advancing years. Mr. Sheldon had rendered devoted service to the Society over a long period, and it seemed only fair to try to find him a successor, which the Committee would proceed to do. He had no doubt that Mr. Sheldon would consent to remain in office for the time being.

Members would be eager to know what progress had been made in the matter of the Stansfield Memorial Medal. The modelling of a die for the Medal from a photograph presented great difficulty, particularly when the features were reproduced otherwise than in profile. A great deal of trouble had been taken to obtain a good result, and before the model was passed it was seen by, among others, Dr. Tom Stansfield and Mr. Greenfield. A considerable sum had been subscribed towards the cost of the medal by officials of the Society, and an appeal for contributions would be inserted in the GAZETTE.

As members were aware, the Society's Rules had become out-of-date, and their revision was contemplated. A draft of the revised Rules had been prepared, and would be considered at a Committee meeting. They could then be passed at the next Annual Meeting after being submitted to members generally.

As for the place of meeting next year, members would be given an opportunity later in the meeting to express their views. It would suffice to decide whether it was to be north, south, east or west, and to leave the precise locality to the Committee's judgment.

A suggestion had been made by Dr. Tom Stansfield that it might be interesting to have friendly competitions at

meetings for the best fronds of specified species ; there would be no money prizes, but certificates of a minor order could be given.

It added to the strength and standing of the Society to have men prominent in the botanical or horticultural world as Honorary Members ; the Committee therefore wished to have authority to submit such names for election.

It was important that the early history of ferns and expert information about them should be set on record while material was still available ; a fertile source of such information should lie in sundry letters written to members over many years by the late Dr. Stansfield. They could not do too much to commemorate the Doctor ; moreover it was especially important that some of his knowledge should not be lost, as it was shared by no one. Possibly it might prove worth while to put this information into book form ; this point could be considered after it was seen what information actually was available. Letters or extracts from letters should be sent to Mr. Greenfield, who had undertaken to get the information into preliminary order. Letters would be carefully looked after and, once dealt with, promptly returned to the owners.

The President then called upon the Secretary to read his report, which ran as follows :

" The Society has held its own during the past year quite as successfully as could be expected.

" The number of subscribing members is 97, one more than last year.

" We have unfortunately lost several valuable members by death : Mr. F. J. Hanbury, the eminent botanist, whose magnificent gardens at East Grinstead have been visited by some of our members ; a few years ago the leading members of the Society labelled a considerable number of his ferns, the names of which had been lost. Dr. John Macwatt, of Duns, Berwickshire, famous as a grower of hardy primulas. Of the death of Mr. Joseph Meade, of Bray, co. Wicklow, we have

only recently been notified; Mr. Meade was awarded the Society's Certificate in 1925 for a *P. angulare tripinnatum*. Lastly, Mr. John Stormonth, of Kirkbridge, Carlisle, who died in April last.

"We have eight candidates for election, and to those of our members who have obtained recruits the thanks of the Society are extended.

"The most successful exhibits of ferns since the last meeting were those of Mr. J. Lloyd, who won the Society's Trophy at the Southport Show, 1937, and Mr. Robert Bolton, who won a gold medal for a large collection which he sent to the Royal Horticultural Society's Hall on August 17th. Several of our members besides Mr. Lloyd won prizes at Southport, namely, Mr. Askew, Mr. Brookfield and Mr. Grubb. Mr. Gandy, another successful competitor, is being proposed for membership.

"An unusual incident during the winter was the receipt by the Secretary of some inquiries about the Society, or requests for advice about ferns, made on the suggestion of the Gardening Editor of a well-known newspaper. In an effort to interest these correspondents both in ferns and in the Society, a copy of the GAZETTE and usually a long letter of information was sent; in one case the Editor identified a frond of a foreign fern, and in two or three the inquirer was furnished with the name of our nearest nurseryman member from whom advice could be obtained. It is discouraging, however, to have to report that not a single inquirer sent so much as an acknowledgment. On the other hand, if the Society becomes a little more widely known, that is all to the good."

Mr. Sinclair next presented the balance sheet (reproduced below) on behalf of the Treasurer, and explained that the large balance was due to the fact that only one issue of the GAZETTE (that of November, 1937) fell within the period which the account covered. There had been no increase in the Society's income.

BALANCE SHEET.

Receipts.	£	s.	d.	Expenditure.	£	s.	d.
Balance from last year	58	6	2	Affiliation Fee, R.H.S.	2	2	0
Subscriptions	33	2	0	Gazette	16	15	8
Sale of Gazettes ..		10	6	Printing	3	3	3
Advertisement ..	2	2	0	Postage, etc.	1	5	0
				Balance at Bank ..	70	14	9
	£94	0	8		£94	0	8

Audited and found correct, June 30th, 1938.

(Signed) James A. Sinclair,
Hon. Auditor.

This balance-sheet was passed, on the suggestion of Mr. T. B. Blow, seconded by Dr. T. Stansfield.

The President then called upon the Secretary to read the list of candidates for election :

Candidate.	*Proposed by*	*Seconded by*
Mr. J. E. Adlard, F.L.S., F.Z.S.	Mr. Greenfield	Mr. Alston.
Mr. Henry Brown . .	Mr. Blow	Mr. Sinclair.
The Rev. R. A. Courthope .	Capt. Dunston	Mr. Sheldon.
Mr. J. Gandy . . .	Mr. Lloyd	Mr. Greenfield.
Mr. R. D'O. Good . . .	Capt. Dunston	Mr. Sheldon.
Mr. H. F. Greenfield. . .	Mr. Sinclair	Mr. Whiteside.
Mr. C. W. Holt, F.R.H.S. .	Mr. Sheldon	Dr. T. Stansfield.
Mr. J. W. Tucker . .	Mr. Lloyd	Mr. Greenfield.

All were duly elected by the meeting.

In addition to these gentlemen, there was elected as an Honorary Member Dr. C. A. Weatherby, of the Gray Herbarium, Harvard, who was proposed by Mr. Alston and seconded by the President.

The President then vacated the Chair, which at his request was taken by Mr. Sinclair, and the meeting proceeded to the election of officers.

Dr. Stansfield suggested that the election of a new President hardly needed consideration, and the meeting at once re-elected Mr. Cranfield by acclamation. In returning thanks, he referred to the long term for which he had held office, and said that he feared he had not done all he might for the Society during the past year, but he would always endeavour to do his best in the Society's interest. (There was a general feeling among the members present that Mr. Cranfield had put a great deal of thought and energy into the Society's affairs during the past year, and that his continuance in office was vital to the well-being of the Society.)

The election of Vice-Presidents followed. Mr. Sinclair, who recently took up the duties of Hon. Auditor, said that he thought it would be in the interests of the Society if he withdrew from his Vice-Presidency, and he proposed Mr. Whiteside to fill the vacancy. Mr. Whiteside was elected *nem. con.*

Passing to the Treasurership, the President said he had only recently heard of Mr. Sheldon's desire to resign, and would suggest to the Meeting that he be asked to continue in office until a successor could be found, and that the Secretary be instructed to express at the same time, in forwarding this request to Mr. Sheldon, the Society's gratitude for his devoted services. This procedure was unanimously agreed.

Mr. Sinclair was re-elected Hon. Auditor on the proposal of Mr. Whiteside, seconded by Dr. Stansfield.

The President proposed the re-election of Mr. P. Greenfield as Hon. Secretary, remarking that he had put in much hard work during the past year ; Mr. Blow seconded, and the motion was carried unanimously.

The members of the Committee were re-elected *en bloc* on the proposal of Mr. Kaye, seconded by Mr. Grubb.

Resolutions on the following points were then passed by the meeting :

A sum up to £3 to be spent on binding the presentation set of nature prints.

The Society to contribute from its funds a sum not exceeding £10 towards the cost of the Stansfield Memorial Medal.

The revised Rules, after being provisionally approved by the Committee, to be made known to members before the next Annual Meeting.

After a discussion on the place of meeting for 1939, it was decided, on the proposal of Mr. Blow, seconded by Mr. Coverdale, that it should be held in Somerset or Dorset. On the suggestion of Mr. Whiteside, supported by Mr. Dixon, it was arranged that an informal meeting of members attending the Southport Show should be held in the fern tent at 3 p.m. on the second day of the Show.

The President mentioned that it was hoped that the next issue of the GAZETTE, which would contain announcements of the many decisions reached by the meeting, would be published very shortly.

The meeting then proceeded to the examination of the fronds exhibited by the President, the Rev. Canon Kingsmill Moore, Dr. T. Stansfield, Miss Andersson-Kottö, and Messrs. Askew, Coverdale, Dixon, and Whiteside.

Certificates were awarded to :

Miss Andersson-Kottö for—

Phyllitis Scolopendrium crispissimum muricatum.

Mr. Cranfield for—

Lastrea dilatata grandiceps Cranfield.

Blechnum Spicant (Smithies' seedling).

Mr. Dixon for—

Polystichum aculeatum gracillimum attenuatum Druery.

Dr. T. Stansfield for—

P. angulare pulcherrimum H.S. No. 5.

Mr. Whiteside for—

Athyrium filix-femina caput Medusæ.

It should be put on record that some fronds sent by Canon Moore were of considerable interest, and that Mr. Coverdale showed a number of fronds raised by himself which were a tribute to his competence as a fern-grower.

EXCURSIONS FROM KENDAL, 1938.

Some of the members had arrived at Kendal on July 16th and made an excursion the following morning round Bowness and Newby Bridge. Ferns were seen in abundance, but the only plant of note was one which appeared to be a possible hybrid between *Lastrea dilatata* and *L. filix-mas*; this was later collected for scientific examination. Another party in the afternoon visited the pleasing Kentmere Valley; hunting, however, was curtailed by a drizzle, and nothing of note was observed.

On the afternoon of the day of the meeting, while one party collected specimens of *L. propinqua* and other ferns for botanical purposes, another proceeded to Whitbarrow, the fine limestone hill to the S.W. of Kendal. By kind permission of the owner, Mr. W. M. Farrer, whose estate borders on the hill, the Society had access to a great deal of interesting ground, and although the time available was too short to admit of the examination of more than part of the slopes below the scar, the party greatly enjoyed both the scenery and the hunting. In the damper parts of the woods, at the foot of the screes, ferns are seen in a beautiful setting. It was a surprise to some of the members that there should be among the species growing here such lime-haters as *Blechnum*, *L. montana*, *Athyrium* and *P. phegopteris*; these species must, of course, be growing in pockets of acid soil.

On Tuesday the members who remained went by car through Crossthwaite, Newby Bridge, Hawkshead, Tarn Hows and back by the north end of Windermere. On high ground east of Newby Bridge, by the roadside, *Athyrium*, *L. montana*, *L. propinqua* and *Blechnum* were growing luxuriantly.

In the neighbourhood of Esthwaite Water polypodies were in abundance, and while no appreciable variation was noticed among these ferns, a cruciate *Athyrium*, in the way of *cruciatum Fieldæ*, was discovered by Mr. Whiteside. It was of neat and regular form, and an offset was taken as a souvenir. The scenery at Tarn Hows was much appreciated, and several members made the round of the lakelets.

How Wednesday and Thursday were occupied appears in the President's and Dr. Stansfield's article entitled " Some Lakeland Gardens ".

On Friday the places visited were Patterdale and Glenridding. The fine scenery proved enjoyable to the point of being distracting to hunters from the south, who have few opportunities of seeing its like. A clough opening towards Ullswater was well hunted ; it was a paradise for ferns, and they looked thoroughly happy in their lovely setting, but there was little to note beyond foliose forms of *Lastrea montana* and a slight tendency to variation in *L. pseudo-mas*. Near this place and close to the road the party came on a large clump of a neatly crested *L. filix-mas*, which was collected. It is remarkable that this form turns up occasionally over a wide area in the Lake District. A similar plant was found several years ago by Mr. Greenfield to the east of Kendal.

SOME LAKELAND GARDENS.

During the visit paid to Kendal by southern members of the Society to attend the Annual Meeting, one of the pleasantest and most interesting features was a tour of inspection of the gardens of several northern members, among them Mr. Whiteside and Mr. Wilson, two of our original founders.

The delegation was headed by the President and the Hon. Secretary, which gave it quite an official flavour, and was most kindly and hospitably received by our hosts.

First on the list was Mr. William Wilson, of Kendal, who showed a small but choice collection. *P. v. plumosum* Whilharris was especially noted, and Mr. Wilson's extensive knowledge of the history of wild finds in the Lakes furnished much interesting information.

Proceeding to Silverdale, the party called on Mr. Kaye, of the Waithman Nursery, who has recently acquired a large collection from an old grower, and an interesting time was spent in examining and trying to name the varieties. Many were seedlings which could only be referred to their respective sections. Offspring evidently from *P. ac. pulch.* Bevis formed an especially interesting group. Mr. Kaye reserves a greenhouse for the élite, and it was pleasant to recognize some importations from Reading which had qualified for admission.

Bolton-le-Sands, the next port of call, provided excellent entertainment at the hands of Mr. C. W. Grubb, of Brookfield Nursery, who showed a large number of ferns growing outside, and a long tomato house where specimen plants are cultivated in pots. Protected from wind and weather, many choice forms have here grown to fine dimensions, and the visitors especially admired their absolute cleanliness and freedom from pests.

It will be remembered that Mr. Grubb exhibited at Southport last year, and it is understood that he intends to develop the commercial side of fern-growing, in which case a valuable source of supply will be available to fern fanciers.

Mr. Dixon, of Hest Bank, one of our most enthusiastic members, has acquired an extensive collection from various sources, and showed the visitors a delightful fernery constructed from a section of a range of glass-houses. Sunk paths had been formed and beds built from sandstone which had been brought from Scotland. In these beds some of the choicest ferns were showing remarkable development. Especially notable was a plant of *P. ac. gracillimum attenuatum*, raised by the late Mr. Druery. This was a truly magnificent specimen, and was awarded a certificate when a frond was

exhibited at the meeting. An equally large plant of its parent Bevis made a fitting companion for it, as also a particularly fine specimen of *A. f. f. plumosum superbum*. Many good examples of *Scolopendrium* were equally well grown and showing the finest development. Among plants outside was a very fine crested *Athyrium* with unusually rigid stems, reminiscent of Troughton's *Lastrea propinqua cristata*. The origin of the plant is unknown, but it is a notable addition to the section.

Mr. R. Whiteside, of Lancaster, possesses a very fine collection, and a most attractive garden sloping towards a burn which runs just outside the garden proper, dividing it from the culinary section. Raised beds, banks and terraces display a riot of colour, in addition to the large collection of ferns which are thriving amazingly. Fine specimens of *Lastrea*, *Athyrium*, *Polystichum*, *Scolopendrium* and *Osmunda* were seen in great luxuriance, and many were the discussions on the origin of varieties little known in southern collections. Among the most admired were *O. regalis cristata* and *undulata*, and *A. f. f. plumosum* of Stansfield, Barnes and Druery.

Mr. Whiteside is raising a large number of seedlings which were interesting, but seemed hardly likely to produce any marked advance on parental forms. The collection was one of the finest we saw, and the cultivation was of the highest order.

Generally speaking these northern collections are rich in varieties found in the Lake District, especially those of *Athyrium*, and by comparison poor in those of *Polystichum angulare* sprung from the plants found in the south, or raised by Jones, Fox, Moly, Wollaston, Druery and others, and the still further refined forms raised from them, especially at Sale. *Polypodium* also seemed not to receive as much attention as it merits.

When visiting Windermere the party learnt that the late Mr. Garnett's collection was in the hands of his daughter, Mrs. Robinson, who kindly allowed inspection of a garden

full of huge and flourishing specimens. *A. f. f. Victoriæ*, *gemmatum* and *Clarissima* were noted, and especially several specimens of *A. f. f. fimbriato-cristatum* Garnett, formerly called *Clarissima cristatum*. These differed from one another in detail, suggesting that a considerable batch of seedlings was originally raised. The parentage is unfortunately not known.

It was understood that Mrs. Robinson wishes to dispose of her surplus, and several specimens were acquired by members.

It is to be regretted that distance prevents closer touch being maintained between members in different parts of the country. Such a visit as the one described is invaluable for purposes of comparison of notes with fellow-workers in the cult. It is hoped that southern members may have opportunities of returning the kindness shown to them in the Lake District, and of showing their own particular treasures.

Mr. Askew's Nursery

As a special expedition a visit was paid to W. F. Askew's Nursery in Borrowdale by our veteran Vice-President, Mr. T. B. Blow, with two other members. After paying a tribute to the warmth of Mr. Askew's welcome and hearing of the difficulties he has experienced of late years in obtaining skilled labour, the party proceeded to inspect the ferns.

They found many fine specimens of commercial varieties of the crested forms of *Athyrium filix-fœmina*, *Lastrea pseudomas* and *filix-mas*, *Phyllitis Scolopendrium*, including many forms of *crispum cristatum*, *ramo-cristatum* and other varieties, *Polypodium vulgare* in the Cambricum section, *pulcherrimum*, *omnilacerum* and other varieties, of which Mr. Askew possesses many fine specimens.

In the glass-houses was a very large number of pans containing prothalli and young ferns in all stages of growth, various forms of *Athyrium Frizelliæ* being conspicuous in the many diverse characters to which this variety has sported.

The original *A. Frizelliæ* was found in Ireland in 1857. It is illustrated in Druery's ' British Ferns ' and figures in Jones's ' Nature Prints '.

Mr. Askew's is one of the few Nurseries which is entirely devoted to the cultivation of British Ferns on commercial lines.

W. B. CRANFIELD,
T. STANSFIELD.

THE SOUTHPORT SHOW, 1938.

It is gratifying to note the continued success of members of the Society at this, the greatest competitive show of British ferns in the country.

The Society's perpetual Challenge Trophy was won this year by the fine group of ferns put up by Mr. J. Brookfield of Birkdale, Southport. On this occasion, as mentioned in an authoritative notice of the show in '*Amateur Gardening*,' quoted with acknowledgments, the limitation of the height of group exhibits to six feet had the desired effect of eliminating inferior forms necessarily included to fill a larger space. The total number of good ferns shown seems to have decreased, owing partly, no doubt, to adverse conditions for growth during the present year. The Society confidently expects that with reasonably good fortune in the matter of weather there will be no shortage next year. That there is no lack of enthusiasm among members was most cheeringly brought home to everybody who attended the meeting of the Society at Kendal in July.

In the competition for the trophy, Mr. J. Lloyd and Mr. C. W. Grubb were 2nd and 3rd.

Other prizes were awarded as follows :

12 Hardy British ferns : 1, J. Lloyd ; 2, C. W. Grubb ; 3, W. Law.

6 Hardy British ferns : 1, F. Scott ; 2, J. Brookfield ; 3, C. W. Grubb.

3 Scolopendriums : 1, C. W. Grubb ; 2, J. Lloyd ; 3, J. Brookfield.

3 Polypodiums : 1, W. F. Askew ; 2, J. Brookfield ; 3, C. W. Grubb.

3 Polystichums : 1, J. Brookfield ; 2, C. W. Grubb ; 3, R. Hayes.

3 Athyriums : 1, J. Brookfield ; 2, C. W. Grubb ; 3, J. Lloyd.

6 ferns, not fewer than 3 varieties : 1, J. Gandy ; 2, C. W. Grubb ; 3, C. Luckin.

3 ferns, dissimilar : 1, J. Lloyd ; 2, Mrs. E. Portnall ; 3, C. W. Grubb.

1 fern : 1, W. Law ; 2, J. Brookfield ; 3, W. F. Askew.

COMMITTEE MEETING—DECEMBER 2ND, 1938.

A meeting of the Committee was held at 6, Poultry, London, E.C., on December 2nd.

The new Rules were discussed and approved for circulation to members before the Annual Meeting.

Dr. T. Stansfield was appointed Treasurer in succession to Mr. J. J. Sheldon.

Financial matters in connection with the Stansfield Memorial Medal were left in the hands of Mr. Greenfield, who had already been relieving Mr. Sheldon in this respect.

At the suggestion of Dr. T. Stansfield the first award of the Medal was made to the President.

HYBRID DRYOPTERIS (LASTREA) IN BRITAIN.

As a sequel to Dr. von Tavel's most valuable letters on hybrid ferns in several numbers of the GAZETTE, a note on this topic as it presents itself in part of the British fern flora may perhaps be of interest. During the last hundred years or so a number of wild specimens of the old genus *Lastrea* (=*Nephrodium* = *Dryopteris*) have been picked out on morphological grounds as possible inter-specific hybrids. Some of the most striking of these have been given separate names and retained in permanent culture. The best known are the following :

1. *L. uliginosa* Newman. Thought to be *L. cristata* × *L. spinulosa*. Recorded from all of the relatively few localities in which *L. cristata* occurs.

2. *L. remota* Moore. Found near Windermere in 1854 by Huddart and thought to be *L. filix-mas* × *L. spinulosa*.

3. *L. remota* Praeger. Found independently by Praeger in Ireland in 1898 and again thought to be *L. filix-mas* × *L. spinulosa*.

4. *L. Boydii* Stansfield. Found on the shore of Loch Lomond by Boyd in 1894 and thought to be *L. filix-mas* (var. *paleacea*) × *L. dilatata*.

5. An unnamed plant thought to be *L. spinulosa* × *L. dilatata* found in Ireland by Praeger in 1935.

Laboratory investigation of all these, made possible largely by the kindness of the late Dr. Stansfield and of Dr. Praeger, is proving to be a difficult but profitable undertaking. Without going into too much technical detail, which would be inappropriate here, the results which have so far emerged are as follows :

In the first place, though the plants are all vigorous, they differ markedly among themselves in their breeding. Three of them, Nos. 1, 2 and 5 above, are highly sterile owing to the abortion of spores. In each of these three, spore-abortion

can be shown to be due to extreme irregularity of chromosome pairing. Now it is known that failure of chromosomes to pair is most often produced by a dissimilarity between those contributed by the male parent and the female parent in a sexually produced plant. It is therefore strong confirmatory evidence of hybridity.

Specimens 3 and 4, on the other hand, that is the Irish *L. remota* and *L. Boydii*, are fully fertile. This fact, known to the original finders, quite rightly caused doubt as to their hybrid nature, for a hybrid, even if fertile, should not breed true. The basis of fertility in these cases is, however, a peculiar type of spore development associated with permanent apogamy. This breeding behaviour is, therefore, not valid evidence either for or against hybridity.

The nature of these two plants is, however, still obscure, for the evidence from their chromosome numbers is not at once interpretable. It is probably significant that the common forms of each of the four species *L. filix-mas*, *L. dilatata*, *L. spinulosa* and *L. cristata* have the same chromosome number. This number is shared by the sterile hybrids 1, 2 and 5 above. *L. Boydii* and the Irish *L. remota*, on the other hand, are marked out not only by their apogamy, but also by the possession of a lower chromosome number than that of the common forms of the so-called parent species. They can, therefore, not at the moment be accepted as simple interspecific hybrids, and it is perhaps best to suspend judgment as to their nature pending further information. It is, however, interesting to note that while the Irish *remota* and the Windermere specimen are clearly different, both the cytological characteristics of the Irish plant, namely, apogamy and low chromosome number, are shared not only with *L. Boydii*, but also with the continental form, to which the name "*remota*" was first applied (*Aspidium rigidum* var. *remotum* Braun, 1850). Yet another specimen to place in the same category is almost certainly *Dryopteris subalpina* Borbas referred to in detail by Dr. von Tavel in his last letter. The continental and the British floras are thus presenting some closely parallel problems for further investigation.

While suspending judgment on *L. Boydii* and the Irish *remota*, it is, however, clear that the confirmation of the original diagnosis of the other three specimens, 1, 2 and 5 above, is of some interest. If *L. spinulosa* × *L. filix-mas*, *L. spinulosa* × *L. dilatata* and *L. spinulosa* × *L. cristata* have been detected with certainty in the wild state, it is highly probable that cross-breeding and hydridization is far commoner among ferns in Nature than has generally been supposed.

I. MANTON.

OFFICERS OF THE SOCIETY.

President :

Mr. W. B. Cranfield, F.L.S., V.M.H.

Vice-Presidents :

Mr. T. B. Blow, F.L.S., Ch.L.d'H.
Mr. R. Bolton, F.R.H.S.
Mr. A. Cowan
The Rev. Canon Kingsmill Moore, D.D., F.L.S.
Mr. J. J. Sheldon, F.L.S.
Prof. F. E. Weiss, F.R.S., F.L.S.
Mr. R. Whiteside.

Hon. Treasurer :

Mr. T. Stansfield, F.L.S.

Hon. Auditor :

Mr. J. A. Sinclair.

Hon. Secretary :

Mr. P. Greenfield.

Committee :

Mr. A. H. G. Alston, B.A., F.L.S.*
Mr. T. Bolton, F.R.H.S.
Mr. J. Dargue Dixon.
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SHELDON, J. J., F.L.S., Monkhams, Lower Road, Great Bookham, Leatherhead, Surrey.
SHERRIN, W. R., A.L.S., South London Botanical Institute, 323, Norwood Road, London, S.E. 24.
SINCLAIR, JAMES A., 57, Stradella Road, Herne Hill, S.E. 24, and 3, Whitehall, S.W. 1.

Smith, Ewart G., 147–151, High Street, Christchurch, New Zealand.
Smithers, Major A., Morleys, Great Hallingbury, Bishop's Stortford, Herts.
Stansfield, Tom, M.B., F.L.S., 120, Oxford Road, Reading, Berks.
Stephens, Edward J., Rose Lawn, Digswell, Welwyn, Herts.
Sudell, Richard, F.I.L.A., A.R.H.S., 4, Bedford Square, London, W.C. 1.
de Tavel, Dr. F., 22, Schosshaldenstrasse, Bern, Switzerland.
Taylor, Miss Jean, Lily Hill Nursery, Bracknell, Berks.
Thorrington, Francis W., Fern Dell, Luscombe Road, Paignton, Devon.
Thorrington, Mrs., Fern Dell, Luscombe Road, Paignton, Devon.
Trotter, P. D., Leith Vale, Ockley, Surrey.
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THE BRITISH PTERIDOLOGICAL SOCIETY

THE SOCIETY originated, in September, 1891, in the Lake District with headquarters at Kendal. Its members were, however, distributed throughout Great Britain and Ireland, whilst some few reside in the Dominions and U.S.A. Its objects are :

(i) The Study of Species and Varieties of British Ferns.

(ii) The Recording of Information with regard to Ferns generally.

(iii) The Exchange of Plants and Spores between Members.

(iv) The Organization of Field Meetings to Search for Ferns.

The British Fern Gazette was established in September, 1909, publication being quarterly until the commencement of the war. After the war publication was restricted to two issues per annum on account of the increased cost of printing and the decrease in the number of members.

Members are invited to communicate with the Editor on subjects of interest with regard to British Ferns. Fronds may be sent to the Editor to be identified or named at any time.

Certificates are awarded to new ferns of distinction of which plants or characteristic fronds are shown at the Annual Meeting for adjudication. The Annual Meeting is held, when possible, at some place where ferns are abundant and from which excursions for fern hunting can conveniently be arranged. These excursions are an important feature of the Society's activity.

A Sub-Committee of the Society undertook a few years ago the correct naming of the National Collection at Kew, and, in conference with the Director and staff, planned and arranged the present fernery, supplementing the collection with gifts of plants from the ferneries of some of the members. The collection in the Royal Horticultural Society's Garden at Wisley was similarly dealt with and augmented.

The Society is affiliated to the Royal Horticultural Society, which is also an individual subscriber to its funds.

The Society is endeavouring to increase its membership and, through this and by other means, to encourage the more general cultivation of the varieties of British ferns. Any lover of horticulture is eligible for membership and the subscription is 10*s.* per annum (due in advance, at or immediately after the Annual Meeting), which entitles members to copies of the *Gazette*.

The Hon. Treasurer will be pleased to supply members who may desire it with Bankers' Orders for the convenient payment of subscriptions.

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The British Fern Gazette

July, 1939

EDITED BY

A. H. G. ALSTON, B.A., F.L.S.

DEPT. OF BOTANY, BRITISH MUSEUM (NAT. HIST.)

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THE BRITISH PTERIDOLOGICAL SOCIETY

President: Mr. W. B. Cranfield, F.R.H.S., V.M.H., F.L.S., East Lodge, Enfield Chase, Middlesex.

Hon. Secretary: Mr. P. Greenfield, Beech Bank, Stuart Road, Warlingham, Surrey.

Hon. Treasurer: Mr. T. Stansfield, M.B., F.L.S., 120, Oxford Road, Reading, Berks.

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EDITORIAL.

THE current number of the 'Brooklyn Botanic Garden Record' for January last (vol. xxviii) has reached us, containing *Dilectus seminum*.

Therein is offered by way of exchange seeds of an extensive assortment of trees, shrubs and flowering plants. Any of the members of our Society who may be interested should communicate with The Seed Exchange, Brooklyn Botanic Gardens, 1000, Washington Avenue, Brooklyn, New York, U.S.A.

We have received two numbers (1937 and 1938) of a new periodical, 'Pteridophyta Exsiccata. Étude critique des Fougères d'Europe'. The periodical, which is in multigraph script, is published by a society which has for its object the exchange of European vascular cryptogams. The first number gives a list of rules and the names of its twenty members—a number to which the society limits itself. Ninety-five specimens were distributed the first year, and there are 21 pages of interesting notes about several of these.

AUG 9 1939

Asplenium septentrionale × *Ruta muraria* is illustrated by two plates. The second volume has a paper by F. Margaine on spores of ferns, illustrated by 23 drawings, each with 3 to 5 figures; it is not unlikely that careful microscopic examination will give valuable results here as in other groups of Cryptogams; one by E. Walter on the madness (affolement) of ferns—anomalies which arise when their normal development is suddenly influenced by external causes—illustrated by four plates; and a detailed account of *Nephrodium uliginosum* or *Boottii* (*N. cristatum* × *Polystichum spinulosum* or *dilatatum*) by Dr. Guétrot.

The periodical was accompanied by a letter from M. Jean Callé (28 Avenue des Gobelins, Paris XIII[e]) to our President, saying that the French Society would be very happy to count amongst its members an English collector, and the President has signified his desire to become a member with a view to facilitating co-operation between the two Societies; your committee has suggested that there should be an exchange of publications and agreement to use translated extracts. M. Callé further states that he has a number of duplicate European and exotic ferns which he will be pleased to exchange for British specimens, particularly " sports ".

Though probably most members of the British Pteridological Society are chiefly interested in the discovery, cultivation and identification of forms of our native species, some doubtless have a desire to learn what is taught in academic circles about ferns and their allies. Botanical investigations tend to proceed along certain well-defined lines for a longer or shorter period, but from the beginning of botanical laboratory teaching in this country, Pteridophytes have received at least their full share of attention. Apart from the obvious interest in the alternation of prothallus and sporophyte, there are many characters which have been interpreted as showing how the vascular systems have become more and more complicated; and, moreover, as this country is particularly rich in fossil forms, these have been studied intensively. Indeed the Pteridophyta have received more attention than any other group on the ground that they present the best object-lesson on continuous evolution of any class of land plants. A summary of the numerous aspects of this study has been published by Martinus Nijhoff at 24 guilders. Many specialists have contributed to this well-illustrated volume of more than 600 pages, edited by Fr. Verdoorn. It is not possible here to give even a summary of its contents, but it should be stated that some of the chapters are in German.

The book is not easy reading, and in many parts goes far beyond what would be required for a final honours student. But there is much in it that might add an additional interest to the hobby of those who are " curious " in the sense understood by the older naturalists.

An invitation to exchange publications has been received from the Horticultural Society of Siam, dating from Bangkok. The invitation was couched in English, but the publication is in Siamese—a language which presents some difficulty in translation. The invitation has been acceded to.

Any of our members possessing a knowledge of Siamese is invited to communicate with the Editor of the GAZETTE, so that members of our Society may enjoy the advantage of any interesting information contained in the Siamese Society's journal.

In the last number of the GAZETTE an account appeared of visits to the gardens of some of our members. As this feature appears to have aroused general interest, it is proposed to continue similar notices in future issues as opportunity arises. Notes of visits to two of our members' gardens appear in this number.

The delay in the issue of the present number of the GAZETTE arises from the absence of the Editor in South America, where he is on a botanical expedition. As his main object is the collecting of ferns and the study of their geographical distribution we may expect some interesting notes from him.

In his absence the GAZETTE is being seen through the Press by Dr. Ramsbottom, Keeper of Botany, British Museum (Natural History), to whom the thanks of the members have been conveyed by the Committee.

SECRETARIAL.

THE ANNUAL MEETING.

The Annual Meeting of the Society will be held this year on the morning of July 24th, at the George Hotel, Chard, Somerset. This locality in the south of Somerset is known to afford good hunting, and it is hoped that a large number of members will attend. Members whose hunting has been restricted to the northern districts would find hunting in the south-west particularly interesting.

The New Rules.

The revised Rules provisionally approved at the meeting of the Committee on December 2nd, 1938, have been printed and copies are being distributed with this number of the Gazette. They will be brought before the Annual Meeting on July 24th next for consideration.

The rules are not fundamentally different from the existing rules. The revision is mainly a matter of bringing the old rules up to date.

The Stansfield Memorial Medal.

As it is desired to close the list to the Memorial Medal as early as possible, those members who are proposing to send donations are requested to forward them to Mr. P. Greenfield, the Hon. Secretary, with as little delay as may be convenient.

REMINISCENCES OF "THE DOCTOR".

My first personal meeting with Dr. Stansfield was interesting, and to him, and the members with him, perhaps somewhat comical.

For years, to me as to others, he had been writing the kindest of replies to inquiries about ferns, and, not satisfied with this, he had sent me many scarce specimens. But until August, 1922, we had not met.

The Annual Meeting that year was at Llanberis. As, with my family, I was spending the month at Harlech, the opportunity of attending came easily.

Often I had wondered what these meetings could offer to a new attender. My picture used to shape into long walks—fatigue—strangers.

What I have to tell about the Llanberis meeting will show my picture was wholly out of focus.

Travelling from Harlech with such speed as the sluggish Cambrian Railway could give, I changed at Carnarvon and stood on the platform waiting for the Llanberis train. On

my head were *two* hats. Expecting heat I had brought a "Panama", and this jammed for convenience upon my clerical hat made a curious top-dress. Presently I became aware of a small crowd hovering about me. Having no objection to my eccentricity being enjoyed, I took no notice of the spectators. Not so they—soon one of them broke line, and coming forward with outstretched hand, as he grasped mine in response, introduced himself as Dr. Stansfield—he had seen my name on my luggage. Immediately I was introduced to the members present, and enjoyed my first experience of the friendly ties which bind so closely together the members of our Society.

Previously I had met and compared notes with individual fern friends; now for the first time I was in company with a number of the chief experts in England. As the train mounted everyone was alive for ferns. They showed in plenty, and identifications were eagerly made to and fro across the carriage, as glimpses were caught on the way.

At Llanberis we were quartered in a very comfortable hotel, with good views. Then came more introductions, for Mr. Cranfield, our President, and others had already arrived.

At dinner I sat beside the President. He was rich in fern lore, and he set the tone of the meeting, which lasted for nearly a week, by freely sharing his stores of knowledge. During the whole stay ferns were the chief, indeed, almost the only subject of conversation. I do not remember seeing anyone with a newspaper. Ferns—how to get them, where to find them, what they needed for successful culture, what special treasures members had acquired—such for us were topics inexhaustible.

Excursions of all kinds crowded the days. Members took part or abstained just as inclination or physique suggested. The energetic were away by 6 a.m., and, after dinner, regardless of the claims of digestion, they would make off again, determined to make full use of the long light of the summer evenings.

The Doctor was everywhere. Though he was not far from seventy, risks did not deter him. One of the discoveries was a quantity of the Filmy Fern (*Hymenophyllum unilaterale*) in a position damp and dangerous. In spite of remonstrances the Doctor insisted on examining it at close quarters. That venture cost him nothing. He clambered back safely. But at our 1929 meeting his adventurous spirit led him into

serious trouble. The meeting was held at Ingleton, Yorkshire. When I arrived on Saturday evening I came into an atmosphere of gloom. That morning a serious accident had prostrated the Doctor. The district is mapped by high walls built of loose rough limestone crags. As the Doctor was scaling, keen as always for ferns, the stones gave way; he fell heavily forward, and an avalanche of rocks crashed down on his back. With difficulty he was helped back to the hotel, and his condition caused great anxiety. Our President, who had always been sincerely attached to him, arranged for an ambulance, and himself travelled with him to Lancaster. Reassuring accounts soon came; recovery proved tedious, but it was complete, and for nearly a decade more he was able to place his unrivalled knowledge at the disposal of the Society.

After our first meeting I had many opportunities of seeing the Doctor. Once I spent a happy day with him at Reading. He initiated me into various methods of culture, and he took me to see that fine veteran T. E. Henwood, whose ferns were magnificent, and his generosity the marvel of the Society. Naturally the Committee of the great Southport Show engaged the Doctor to judge the ferns. At one of the shows, after the judging, I went with him to the exhibits. The nomenclature of our favourites is difficult, especially when there is little knowledge of Latin and Greek. With unerring precision the Doctor, where error showed, wrote the correct titles for the future benefit of exhibitors.

After once tasting the joys of an annual meeting I became a constant attendant. Except at Ingleton, after his accident, the Doctor was always present and supreme.

Naturally a prime object of every member at a meeting is to secure a good "find". But very seldom is the desire gratified. As a fern lover for fifty years, only four permanent wild "finds" have come to me. On the other hand, variations from the normal are common. Members seldom failed to bring in something which raised hopes. I can hear the Doctor's unerring comments—he was never at fault. "Yes, not quite normal now, will be next year." "Interesting but not uncommon." "Not enough departure to constitute a variety." "Frequently found so." With these and similar judgments he often shattered hopes; but we were satisfied that he had no option. The decisions were given with authority; we felt that they were final.

But while wild " finds " are rare, there appears to be no limit to the novelties which can be obtained from the cultivation of spores. From a single sowing from one fern I once grew some ten distinct kinds ; two of them were awarded the Society's Certificate.

The mention of the Certificate suggests another duty of annual meeting where again the Doctor's inexhaustible lore was invaluable. At the conclusion of the President's Address, the reading of the Report and the Statement of Accounts, candidates for Certificates presented their fronds. One by one the specimens are passed round, and comments are made. Usually, but especially where there was doubt, the Doctor would sum up, indicating his own opinion. Then a vote was taken. I have never known anything but a unanimous decision either for or against. As has been mentioned, many meetings passed without adding a wild find to pteridology. But I never was present when no Certificates were won. At Llanberis there were five.

The Doctor's devotion to ferns might almost be called a passion. He knew the origin of almost every extant variety, and where sources were obscure eagerly welcomed any clues. When a variety disappeared his regrets were as those for a lost relative. He took pleasure in sending spores of rarities to members likely to be able to cultivate them. Two of his latest distributions had a pathetic interest, as they came from M. Kestner, who died not long after. One was *Cystopteris alpina*. This I found myself, more than once in Switzerland. The other a fern which had aroused interest and debate. The name *Asplenium forensiense* has been given to it, derived from one of its two known habitats. I do not think agreement has been reached as to whether it is a new species or a variety.

The Doctor was delighted at hearing that both these sets of spores had grown well. Of *A. forensiense* I have two well-filled pots. I think it must be a species. It is certainly unlike any other fern I know. I mention these last gifts of spores because they are evidence of a life-long characteristic of the Doctor which affected the whole tone of our Society. To a friend visiting my collection I spoke of a collector who was ahead. " I suppose," he said, " you hate him." " No," I replied, " we are on excellent terms, and do our best to help each other." In proof of this spirit I quote the words of the President at the Llanberis meeting. " In our Society there is no jealousy ", and I add, in conclusion, the offer made

to me on the same occasion by the Doctor's life-long friend, T. E. Henwood. We had never before met. This did not prevent his showing me a catalogue of his ferns, a splendid collection—and when I had studied its richness and variety, he astonished me by saying " You are welcome to anything there of which I have a duplicate ".

H. KINGSMILL MOORE.

A VISIT TO THE CHALET, WELWYN.

Mr. T. B. Blow has travelled widely in Japan, China, India, and in most European countries, and possesses a very wide circle of friends and acquaintances. He is a botanist of no small attainment, and has made expeditions into the interior of British Guiana and West Indian Islands, mainly to collect Charophyta. An especially arduous journey was made to Madagascar for the purpose of discovering facts on which to determine the efficacy, or otherwise, of Charophyta as a preventative to malaria ; the results were negative. A full account of Mr. Blow's expeditions appeared in the October number of the ' Journal of Botany ', 1938.

He is an old member of the Amateur Photographic Field Club and the Camera Club. His collection of Japanese prints and Kakemono, and a large collection of Japanese sword mountings including Kosuka, Fuchi-Kashira and Menuke are well known.

He collaborated with Reginald Hine in the preparation of ' The Natural History of the Hitchin Region '.

The gardens of The Chalet are of considerable extent and ferns abound everywhere. In addition to the ferns, and interspersed therewith, are many examples of rare British flowering plants.

The foundation of the collection dates from 1857 by gifts from Anthony Parsons and Henry Fitt. Soon afterwards a large number of the older types which were grown by the late Mr. W. J. Blake, F.R.S., at Danesbury, were acquired, and subsequently many more from the collection at " The Frythe " at Welwyn, where Henry Fitt was gardener.

The cream of the collection, particularly the *plumoso-divisilobum* and *divisilobum* sections of *Polystichum angulare* came from Sale, the source from which many of the choicest ferns in these sections now in cultivation were raised and distributed.

In addition to acquisitions from this source Mr. Blow has himself raised large numbers from spores, and found several well-marked varieties which are now installed at The Chalet.

It will be recalled that in collaboration with the late Mr. Henry Mount, of Canterbury, a very large number of *A. f. f. clarissima* were raised by apospory and widely distributed to members of the Fern Society and others.

Among the species and varieties noted were *Polypodium vulgare cambricum*, *pulcherrimum*, *cornubiense*, *omnilacerum*, *grandiceps Parker*, and the commoner varieties, all of which exist in very large and old-established clumps. *Lastrea filix-mas*, *pseudo-mas* and *dilatata* abound in noble specimens of The King, *grandiceps* (Wills), *Bollandiæ*, *ramossissima*, *congesta*, *linearis*, *lux lunæ* and many other varieties. In *Phyllitis Scolopendrium* are many forms of *crispum*, one outstanding plant being a counterpart of *crispum speciosum*, but with white variegation to an extraordinary extent. The owner stated that this character had been constant for many years. Amongst *Athyrium filix-fœmina* are many fine specimens in the *superbum* section, including *plumosum* Druery, *percristatum* Druery, and many of the older crested and congested forms. There are several fine plants of *Blechnum Spicant*, including a crested form found by Mr. Blow.

The feature of the collection is, however, the large numbers of *Polystichum angulare* and *Polystichum aculeatum* ; in the latter the pride of place would be given to an unusually fine plant of Green's *plumosum*, which displayed quite abnormal development, growing in the open without any protection.

Aculeatum pulcherrimum and *A. acutilobum* are also very fine, but the great feature is the large number of *plumoso-divisilobum* forms, *densum*, *laxum*, *pseudo-Esplan*, and large numbers of their descendants, which emanated from Sale years ago, and from which very large numbers of the same section have been raised by Mr. Blow. The *Divisilobes* and *Acutilobes*, some of which were enormous plants, embrace most of the older forms and many of the modern varieties, including *laciniare*, *productum*, *longipinnatum* and *stipulatum*,

whilst various crested *grandiceps* and *foliosum* forms were abundant. Amongst the latter is a variety raised by Mr. Blow, in which the inferior pinnulets adjacent to the rachis were abnormally prolonged and might be fittingly described as *aurito foliosum*.

One striking *cruciatum* possessed fronds eighteen inches long and one inch in width in the narrowest, and two inches in the widest part. It is the narrowest I have ever seen, and may be the original Elworthy's *cruciato truncatum* or descended therefrom, being much narrower than *Wakeleyanum*. Normal *Osmunda regalis* and *cristata* were flourishing near water. A very acute form of *Asplenium Adiantum nigrum*, almost equal to the typical *acutum*, is growing on a rock-covered bank in association with *Asplenium viride*, *Asplenium Trichomanes*, normal and crested forms, *Asplenium germanicum*, *A. ruta-muraria* and *Cystopteris fragilis*. Whilst parts of the garden are supplied with water many of the ferns were suffering from the abnormally dry season. None of the plants are labelled, which renders identification a matter of some difficulty and on inquiring the origin of an unusually fine plant the owner usually replied by tickling it with his walking-stick and remarking " Sale, I suppose ".

Among the events of Mr. Blow's long and interesting life not the least may be his activities as a member of the British Committee of the French Red Cross during the whole of the Great War and in relief work for those returning to their homes after the War ; the President of the French Republic invested Mr. Blow with the Legion of Honour, with the rank of Chevalier, for his services.

That he may long be spared to enjoy the peaceful pursuits with which he now occupies himself is the ardent wish of his many friends and fellow members of the Society.

W. B. C.

HISTORICAL NOTE.

In a description of the *plumoso-divisilobum* section of *Polystichum angulare* it is recorded that *P. a. d. p. Baldwinii*, the finest of the section, was exhibited at the Royal Horticultural Society's Fern Show in July, 1890.

While fine shows of ferns put up at the Royal Horticultural Society's headquarters by the President, by Mr. Robert Bolton, and by a number of members (for example in 1925) are in most fern lovers' recollection, it seems likely that few members remember the 1890 exhibition and there is no account of it in the records of the British Pteridological Society, which was founded in 1891. It was evident that if a full account of the Exhibition could be found it might afford a useful link between the inception of the B.P.S. and what was happening in the years which immediately preceded it.

The only account of the exhibition so far traced is one included in the second volume of the *Gardeners' Chronicle* for 1890. The exhibition was held in conjunction with a Fern Conference at Chiswick under the auspices of the Royal Horticultural Society. It must have been an imposing one. British and exotic ferns were shown by several professional growers in great quantity, one firm putting up about 600 varieties, including filmy ferns. But it is the amateur exhibits of British hardy ferns which are of particular interest. The descriptions of, and comments on, ferns which follow are as given in the published account, apparently, at least for the most part, the work of Druery. These amateur exhibits were provided almost exclusively by E. J. Lowe and C. T. Druery. Lowe put up about 200 varieties and Druery half that number. Lowe's exhibit was described as characterized by vigorous healthy growth and, in some cases, huge size. Particular mention was made of *P. a. d. p. densum* and *P. a. d. p. Baldwinii*, the former surpassing even *Todea superba* in the density and featheriness of its finely dissected fronds, while the latter had gone a step further and would eventually outstrip its fellows in the same section. Some remarkable hybrids of *Scolopendrium* are noted as displaying combined characters of four parental forms, viz., *spirale*, *undulatum*, *muricatum* and *keratoides*. On these the comment was made that they were useful as showing what can be done, but a plea was made for avoiding monstrosities, and retaining only forms which are improvements on earlier ones, aiming for greater beauty, and consigning all inferior or ugly forms to the dust heap. This advice has since been adopted by the British Pteridological Society as one of its cardinal principles. The commentator went on to remark that Lowe exhibited some yellow variegated *Scolopendriums* and a tasselled *Polystichum angulare* with a pretty white variegation.

Of Druery's ferns it is remarked that the main feature was the number of representative varieties of *Blechnum*, *e. g.*,

plumosum Airey—immense development ; and *concinnum*—a wild find. Other ferns noted specially were *Lastrea montana cristata gracilis* (presumably the fern found by Druery on Dartmoor in 1888, and generally called *cristato-gracilis*) ; *Scol. v. crispum* Wills ; four generations of *Athyrium plumosum*, viz. the Axminster wild find ; *plumosum elegans* Parsons ; *plumosum superbum* ; *plumosum* Druery : *Athyrium clarissima* and *Polystichum angulare pulcherrimum*, Wills.

A Silver Challenge Cup for the best collection of hardy ferns was awarded to Lowe, and Druery was awarded a silver-gilt Flora Medal. Certificates of merit were awarded to some 50 varieties, and as these presumably represent a number of the most striking ferns in a good state of cultivation at the time they are given below in full, as being a useful extension backwards of the British Pteridological Society's list of certificated ferns—numbering 88. The only fern which appears in both lists is *Baldwinii*.

E. J. Lowe's Ferns.

Aspidium angulare plumosum foliosum (1).
,, ,, *polydactylum variegatum.*
,, ,, *latifolium grandiceps.*
,, ,, *remoto-decurrens.*
,, ,, *div. plumosum* (sic).
,, ,, *flabelli-pinnulum.*
,, ,, *decompositum frondosum.*
,, ,, *plumosum coronare.*
,, ,, *div. plumosum imbricatum.*
,, *aculeatum pulcherrimum Abbottæ* (2).
,, ,, *hybridum* (3).
,, ,, *Nepos.*
Athyrium f. f. cruciatum columnare.
,, ,, *calomelanos.*
,, ,, *Victoriæ.*
,, ,, ,, *gracile.*
,, ,, *unicum.*
,, *grandiceps coronare.*
,, *cristatum magnificum.*
Nephrodium paleaceum pendens.
,, ,, *cristatum globosum* (4).
,, *spinulosum spectabile* (5).
Scolopendrium vulgare crispum angustum.
,, ,, ,, *Cowburnii.*
,, ,, ,, *grandiceps* (6).

Scolopendrium vulgare crispum reflexum.
,, ,, ,, *robustum.*
,, ,, *inæquale cristatum pericallis* (7).
,, ,, *peraforum rosetta.*
,, ,, *projectum capitatum.* (8).
,, ,, ,, *princeps* (8).
,, ,, *ramosum Alexandræ.*
,, ,, *undulatum muricate* (sic) *spirale* (9).
,, ,, ,, *synthesina* (10).
,, ,, *variegatum aureolum.*
,, ,, ,, *luminare.*
Adiantum capillus-Veneris autumnale.
Trichomanes radicans crispum cristatum.

C. T. Druery's Ferns.

Athyrium f. f. stellatum angustatum.
,, *percristatum* J. S. Cousins.
,, *plumosum superbum.*
Blechnum Spicant ramo cristatum.
,, ,, *concinnum.*
,, ,, *plumosum* Airey.
Lastrea montana cristato-gracilis.
Polystichum angulare pulcherrimum Wills.
Scolopendrium vulgare crispum Wills.

J. L. Baldwin's Ferns.

Polystichum angulare divisilobum plumosum Baldwinii.

H. Stansfield & Company's Ferns.

Scolopendrium crispum fimbriatum.
,, ,, ,, *grandiceps.*
,, ,, *fimbriato-lutescens.*

Notes.

(1) Possibly *divisilobum foliosum* Lowe.

(2) Query *grandiceps Abbottæ.*

(3) Said by Lowe to be a hybrid between *Aspidium angulare Wakeleyanum* and *Asp. aculeatum densum.*

(4) This appears to be Druery's name for the fern found near Bettws-y-Coed, by Mr. Boyd. It was called *crispulum* by Lowe.

(5) Lowe's classification. The fern would probably now be regarded as a variety of *dilatata*.

(6) Cannot be identified.

(7) This is perhaps Lowe's *pericalles* (*ramo-marginatum*).

(8) No doubt a sagittate form.

(9) Whether this fern was *undulatum spirale* or *muricato-spirale* appears doubtful. More probably it was one of Lowe's "hybrids"; *cf.* Note 10.

(10) Described by Lowe as a cross between *undulatum*, *spirale*, *rugosum* and *keratoides*.

This information appears to be all that is available about the exhibition proper; but it is hoped on another occasion to give some particulars of various discussions on fern matters which were going on about the same time. Clearly the coming authorities on British ferns were C. T. Druery and F. W. Stansfield, and they and others expressed the opinion that there should be an authoritative body to control the cult of British ferns. The pioneers in the North of England who founded the Northern British Pteridological Society in 1891, acted more opportunely than they knew. They received almost immediately the co-operation of all the stalwarts of the fern world in the British Isles; the Society became in effect a national one, and there was every justification for changing its title in 1893 to the British Pteridological Society.

P. GREENFIELD.

A VISIT TO DOVE NEST, WINDERMERE.

During the Society's visit to Kendal, the President (accompanied by Dr. T. Stansfield and Mr. T. Blow) paid a long-promised visit to his old friends, Mr. and Mrs. Chew, both of whom are very keen horticulturists. The party met with the warmest welcome, the senior member being accommodated with rest in addition to refreshment.

The house occupies a delightful position, approached by a very steep winding drive, on a steep hillside. The prospect from the terrace of the full length of Lake Windermere glinting in the sun chequered with the reflection of fleeting clouds is a prospect of great beauty, but delightful as was the view we were assured that the hues of the richly-wooded hillside in autumn were considered of greater attraction, whilst perfection was reached when the harvest moon illuminated the surface of the water.

The estate was formerly occupied by the late Mr. Holden Illingworth, who went to considerable expense in altering and modernizing the house and laying out and planting the gardens. When Mr. and Mrs. Chew went into occupation the place had been vacant for some time ; with the abundant rainfall in the district all vegetation, especially bamboos, makes luxuriant growth, whilst ferns monopolize every situation where existence is possible.

The process of clearing the exuberant growth disclosed many rare and beautiful shrubs. We were surprised to find many large specimens of choice varieties of British ferns, large specimens of *P. aculeatum acutilobum*, *Lastrea polydactyla* of Wills, *Athyrium filix-fœmina* in several crested varieties ; whilst the walls of the garden and outbuildings were crowded with *Asplenium Trichomanes*, *A. Adiantum nigrum* and *A. Ruta-muraria*. It transpired that Mr. Blow had assisted the late Mr. Holden Illingworth to plan and plant a fernery, the plants having been supplied by Mr. H. Stansfield, of Sale. Many of the choice varieties had been crowded out by normals. On the beauty of the survivors being pointed out to host and hostess, both became enthusiastic and, having the late Mr. Garnett's collection to draw upon, are intending to remake the fern garden. With such natural advantages the choicest varieties will luxuriate ; the greatest difficulty will be the suppression of normals which so rapidly usurp possession to the detriment of choicer forms.

While reflecting upon the rainfall, or rather lack of it in Reading and Enfield, we could but congratulate the new recruits to the Society upon their natural advantages and by adding specimens from our respective collections, try to whet the appetite for possession of varietal forms of our native ferns.

If only folks similarly circumstanced could be induced to grow even a few of the best varietal forms of British ferns

they would no longer be the Cinderellas in the horticultural world, but occupy a position merited by their grace and beauty.

A NEW FERN.

To the great regret of her colleagues and all fern folk who enjoyed the privilege of acquaintance, Miss Andersson-Kottö has resigned her connection with the John Innes Horticultural Institution, and returned to her native country, Sweden. In a letter to the writer Miss Andersson-Kottö stated the pleasure a perusal of our Society's GAZETTE afforded her, and especially the desire that the Association may be maintained in the future, a sentiment which was heartily reciprocated.

During last summer I received from Miss Andersson-Kottö a form of *Phyllitis Scolopendrium*.

The form in question recalls a dense *crispum congestum*, the fronds being congested circular spirals, the margin being slightly fimbriate.

The habit of the plant is sturdy and erect, about six inches in height, the type so far as is known being new to cultivation.

As is generally known, Miss Andersson-Kottö had been for some years experimenting in hybrids and genetic investigation of British ferns, and has in the course of her experiments raised large numbers of *Phyllitis Scolopendrium* both curious and beautiful. Sir Daniel Hall, the Director, offered these ferns to the writer, who gladly accepted them. They included some strikingly variegated forms which, should they prove constant, will be interesting, though more various than beautiful. Some fronds will be available for inspection at the next annual meeting of our Society. W. B. C.

ADLARD AND SON, LIMITED, 21 BLOOMSBURY WAY, LONDON, W.C. 1.

THE BRITISH PTERIDOLOGICAL SOCIETY

THE SOCIETY originated, in September, 1891, in the Lake District with headquarters at Kendal. Its members were, however, distributed throughout Great Britain and Ireland, whilst some few reside in the Dominions and U.S.A. Its objects are :

(i) The Study of Species and Varieties of British Ferns.

(ii) The Recording of Information with regard to Ferns generally.

(iii) The Exchange of Plants and Spores between Members.

(iv) The Organization of Field Meetings to Search for Ferns.

The British Fern Gazette was established in September, 1909, publication being quarterly until the commencement of the war. After the war publication was restricted to two issues per annum on account of the increased cost of printing and the decrease in the number of members.

Members are invited to communicate with the Editor on subjects of interest with regard to British Ferns. Fronds may be sent to the Editor to be identified or named at any time.

Certificates are awarded to new ferns of distinction of which plants or characteristic fronds are shown at the Annual Meeting for adjudication. The Annual Meeting is held, when possible, at some place where ferns are abundant and from which excursions for fern hunting can conveniently be arranged. These excursions are an important feature of the Society's activity.

A Sub-Committee of the Society undertook a few years ago the correct naming of the National Collection at Kew, and, in conference with the Director and staff, planned and arranged the present fernery, supplementing the collection with gifts of plants from the ferneries of some of the members. The collection in the Royal Horticultural Society's Garden at Wisley was similarly dealt with and augmented.

The Society is affiliated to the Royal Horticultural Society, which is also an individual subscriber to its funds.

The Society is endeavouring to increase its membership and, through this and by other means, to encourage the more general cultivation of the varieties of British ferns. Any lover of horticulture is eligible for membership and the subscription is 10*s*. per annum (due in advance, at or immediately after the Annual Meeting), which entitles members to copies of the *Gazette*.

The Hon. Treasurer will be pleased to supply members who may desire it with Bankers' Orders for the convenient payment of subscriptions.

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HARDY PLANT FARM

ENFIELD, MIDDX.

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A. H. G. ALSTON, B.A., F.L.S.

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President:

Hon. Secretary: J. R. Pulham, Hon. A.I.L.A., 71, Newman Street, London, W.1

Hon. Treasurer: J. W. Dyce, 4, Mayfair Gardens, Woodford Green, Essex.



Polystichum angulare plumosum grande

THE

BRITISH FERN GAZETTE

NEW SERIES.

VOL. VII. AUGUST, 1948. No. 8.

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EDITORIAL

Unfortunately, my colleague Mr. A. H. G. Alston has had a long illness from which he has not yet completely recovered. Consequently he has been unable to get together notes, comments and reviews which would have made the GAZETTE more valuable to members. I do not feel either qualified or justified in taking over his editorial functions but have gladly undertaken to see the present number through press.

It may not be out of place here for me to express my great appreciation of the honour which the British Pteridological Society has conferred on me in electing me an Honorary Member. I look forward to seeing the Society develop along scientific lines while retaining the characters which have endeared it to its members. The collector and cultivator have much to offer the trained botanist and much to gain from his co-operation. I hope to see the British Pteridological Society make the same advance on this broad basis that have other specialized cryptogamic societies in this country.

J. RAMSBOTTOM.

In pursuance of my assurance to Dr. F. W. Stansfield shortly before his death, I am endeavouring to resuscitate our Society, of which my old friend was one of the founders and, in his lifetime, its mainspring.

During the late world war its activities were suspended. The untimely death of Dr. Tom Stansfield and many of its officers and members have necessitated extensive reconstruction of its personnel The Committee has been reconstituted, and a new Secretary and Treasurer appointed. The primary necessity was to increase the membership, and such a generous response has been received that I believe I am able to state that the continuity of the Society is assured. I am endeavouring to persuade everyone who possesses a garden to grow a few of the distinct varieties of our native ferns, and nurserymen to cultivate them commercially.

As members are aware the Society has presented a Challenge Cup which is competed for at Southport at which Show many classes are provided for British Ferns, and also founded a memorial medal to the late Dr. F. W. Stansfield, which under normal conditions would have been awarded annually for outstanding services to the cult. It remains to be seen what further means can be adopted by the Committee to advance the interests of our Society.

I would urge all members to communicate any subject of interest to the Editor of the GAZETTE, and can assure members that any advice or assistance will be willingly accorded by the officials of the Society.

W. B. CRANFIELD, V.M.H., F.L.S.,

President.

NOTE

By J. R. Pulham, Hon. A.I.L.A.

I feel that a few words of explanation may be due from me with reference to my appointment—that of a non-member —to the post of Secretary.

For some time past our late President had mentioned that he was most anxious to get the Society going again, but as Mr. Greenfield did not feel able to continue as Secretary, he was desirous of getting someone to take his place, and urged

me to do so. I therefore finally consented, joined the Society, and was appointed Secretary.

It was, however, most unfortunate that so soon after taking office we had to deplore his untimely death, and before I had been able to thoroughly get into my stride.

Fortunately, Mr. Greenfield, our late Secretary, the Officers, and some members of the Committee, have been most helpful, and I feel that I owe them a debt of gratitude for their assistance, and trust with the whole-hearted support of the members, the Society will soon take its place amongst the other specialist Horticultural Societies. No effort shall be wanting on my part to secure that happy consumation.

THE ANNUAL MEETING, 1939

The forty-fourth Annual Meeting of the Society was held at the George Hotel, Chard, on July 24th, 1939.

Members present were:—

Mr. W. B. Cranfield (President)
Mr. J. W. Dyce
Mr. P. Greenfield
Mr. D. Leighton
Mr. H. G. Rugg
Mr. J. A. Sinclair
Dr. T. Stansfield

Mr. H. Stabler attended as a visitor.

Letters were before the meeting from the following members who were unable to attend:—Mr. A. Cowan, Mr. J. D. Dixon, the Rev. E. A. Elliot, the Rev. Canon H. Kingsmill Moore, Mr. J. J. Sheldon, Mr. F. W. Thorrington, and Mr. R. Whiteside. The meeting was sorry to learn that Mr. J. J. Sheldon was in bed with a severe chill, and that Mr. F. W. Thorrington was not well enough to undertake a journey.

After welcoming the members the President proposed, if it was agreed, that the minutes of the Annual Meeting of July 18th, 1938, should be taken as read and confirmed. He asked the Secretary to read the minutes of the Committee Meeting held on December 2nd, 1938. The essential decisions

of the meeting were published in the December, 1938, issue of the GAZETTE. The minutes were confirmed.

In his introductory address the President said he regretted that so few members had been able to attend the meeting. He explained that in any case it would not be possible for the meeting to approve the new rules, as they had only just been despatched to members with the GAZETTE: notice in advance was necessary, to give an opportunity for any comments to be made or objections to be raised. The GAZETTE had been seriously delayed as a result of the absence of the Editor, an account of whose successful flower and fern hunting expedition in South America they would see in that day's issue of *The Times*. The rules could be presented at the next Annual Meeting, subject to any observations on them that might be received in the meantime.

The President then asked the Secretary to read his report, which was as follows:—

" The number of subscribing members in the Society, if two more elections are confirmed to-day, is 101. The Society has sustained but one serious loss, that of Mr. J. C. Williams, Caerhays Castle, Cornwall. Mr. Williams was a great horticulturist, specialising chiefly in Rhododendrons and Daffodils.

" During the year suggestions for exchange of publications have been received from a French Society of eminent botanists, and from the Horticultural Society of Siam.

" An enquiry for certain information has been made by the Agricultural College of Norway.

" The response to the invitation to send to the Secretary, for record, letters, or extracts from letters, written by the late Dr. Stansfield has so far been disappointing. Probably, as the invitation was embodied in the report of the Annual Meeting, it was overlooked by some members.

" As usual, nearly all the prizes for ferns at the Southport Show last year went to members of the Society. The Society Challenge Trophy was won by Mr. J. Brookfield. The other members successful were:—Messrs. W. F. Askew, J. Gandy, C. W. Grubb, and J. Lloyd. An informal meeting of members was held at the Show, and a similar one will

probably be held this year on the afternoon of the second day of the Show. Any members who are in Southport will no doubt attend. The Secretary will, if possible, be present.''

The financial statement presented by the Treasurer was as follows:—

Receipts	£	s.	d.
1938 June 30th			
Balance in hand ..	70	14	9
Subscriptions ..	32	2	6
	£102	17	3

Expenditure	£	s.	d.
Annual Meeting ..	1	18	0
Gazette	29	0	2
Stansfield Medal Fund	10	0	0
R.H.S. Affiliation Fee	2	2	0
Printing and Stationery	2	5	1
Stansfield Medal for presentation	1	15	0
Postages and Stamps, etc.		7	6
Balance in Bank ..	52	19	6
Balance in Hand ..	2	10	0
	£102	17	3

This was passed provisionally, subject to audit, which it had not been possible to complete before the meeting.*

* The financial statement was audited, found correct, and duly signed by Mr. Sinclair on August 29th, 1939.

The following candidates for election were admitted to membership:—

Candidate	*Proposed by*	*Seconded by*
Mr. Darwin Leighton	Mr. J. A. Sinclair	Mr. W. Wilson
Mr. R. Richardson	Mr. R. Whiteside	Mr. P. Greenfield

The President proposed that Mr. J. Ramsbottom, O.B.E., Dr.Sc., M.A., should, subject to his consent, be elected an Honorary Member. Dr. Ramsbottom is Keeper of Botany at the British Museum (Natural History), and President of the Linnean Society. Our Society would be honoured by having him as an Honorary Member. Dr. T. Stansfield seconded the proposal, which was agreed to unanimously.

The President then vacated the chair and the meeting proceeded to the election of officers. Mr. Sinclair proposed the re-election of Mr. Cranfield as President, referring to his invaluable services as President, and to the serious difficulty in which they might be placed if he could not continue in office. Mr. Leighton seconded and expressed the hope that Mr. Cranfield would agree to serve. Mr. Cranfield was unanimously re-elected.

In accepting office, Mr. Cranfield said that as the members knew, he was handicapped physically, but it would be a pleasure to him to do his best for the Society for another year. He thought, however, they ought to envisage the appointment of a younger President: he had now been President eighteen years. As they were aware, the loss of Dr. F. W. Stansfield created great difficulties for the Society.

During the past year it had become a matter of increasing anxiety to the President and the Secretary to get out the GAZETTE. Delay at the British Museum was unavoidable, largely as a result of pressure of work common to Government departments in view of the political situation. He would like to point out again that the existence of the GAZETTE depended on contributions by members.

He went on to say that he thought the proposed meeting at Southport would be useful, and mentioned that members there last year had suggested the preparation of a short pamphlet in the interest of the Society. This he would look into.

A request had been received from the Editor of *The Guild Gardener* for an article on ferns. Something elementary was required and he would co-operate with the Secretary in the matter.

The meeting then proceeded with the election of officers. The Vice-Presidents were unanimously re-elected *en bloc*. Mr. Sinclair proposed that Dr. T. Stansfield be re-elected Treasurer and Mr. Leighton seconded: this was carried unanimously. Mr. Sinclair was re-elected Auditor on the proposition of Mr. Leighton, seconded by Mr. Rugg. The Hon. Secretary was re-elected on the proposition of Mr. Leighton, seconded by Mr. Dyce. Regarding the re-election of the Committee, Mr. Sinclair said that as Auditor he did not think he ought to be a member of the Committee. The vacancy thus created was filled by the election of Mr. Dyce, proposed by Mr. Leighton, seconded by Mr. Sinclair. On the assumption that other members of the old Committee would be prepared to carry on, they were re-elected *en bloc*.

The President said that a report had been prepared to show the financial position regarding the Stansfield Memorial

Medal, and asked the Secretary to read it. The report was as follows:—

"Contributions have been made by Messrs. A. H. G. Alston, T. B. Blow, R. Bolton, A. Cowan, W. B. Cranfield, J. D. Dixon, the Rev. E. A. Elliot, Messrs. H. F. Greenfield and P. Greenfield, the Rev. Canon Kingsmill Moore, Messrs. J. J. Sheldon, J. A. Sinclair, Dr. T. Stansfield, Mr. Tucker, and Mrs. Little (Doctor Stansfield's daughter).

	£	s.	d.
"These contributions amount to	43	3	0
The Society as a whole has subscribed ...	10	0	0
The amount required to make up the sum due to the makers of the die (who have been paid £50 on account) is ...	21	17	0

"An appeal for further contributions has been inserted in the GAZETTE, and it is hoped that at least the greater part of the sum still required will be forthcoming."

The Secretary stated that the firm were asking to be paid the outstanding balance due to them. It was agreed that the Secretary's offer to forward a cheque for the amount should be accepted, the question of adjustment with him to be left until the list is closed. (A further 10s. was subscribed in August, 1939.)

The President referred to the Nature Prints presented by Miss Jones and held at the British Museum. He hoped that it would soon be possible to have them sorted for issue to members.

Some discussion followed on a suggestion to issue the GAZETTE as an annual instead of a half-yearly publication. There was a considerable difference of opinion and it was agreed unanimously that a much larger body of members must be consulted before any change could be contemplated. The President pointed out that the real difficulty was that of obtaining adequate contributions to the half-yearly GAZETTE. Mr. Sinclair suggested a feature which would be interesting to him and probably to many others, viz., the illustration of pinnal types, e.g., divisilobes, etc. There was a good deal of support for this suggestion, and it was agreed it ought to be given further consideration.

The question of an award of the Memorial Medal for 1939 could not be proceeded with, in view of the small number of members of the Committee present. The Meeting congratulated the President on receiving the Medal for 1938, and, in response, he expressed his satisfaction in possessing it in remembrance of Dr. F. W. Stansfield; it was his greatest treasure. Dr. Tom Stansfield, in a few remarks, referred to the unanimity at the Committee Meeting which awarded the Medal to the President, and said the President was the sheet anchor of the Society: he suggested that he should extend his eighteen years of service to a quarter of a century.

The date of the next Annual Meeting was fixed for July 22nd, 1940. It was left to the Committee to decide the place for the Meeting with a recommendation that it be in the northern part of England, not necessarily the Lake District.

Fronds submitted to the Meeting were then examined.

Mr. Richardson, of Lytham, St. Anne's, submitted for naming a frond of an *Athyrium* he had found on Wansfell. It was decided that the fern might be called *Athyrium grandiceps* Richardson. Mr. Sheldon sent to the Meeting fronds of *Adiantum* which he had received from Mr. H. H. Trevethick, of Hayle, Cornwall, who had found *Adiantum Capillus-Veneris cornubiense* in 1868. The Meeting was greatly interested to hear of Mr. Trevethick, now over ninety years old, and the Secretary was requested to send him a letter of thanks and congratulations.

As usual, a fine collection of fronds was sent by the Rev. Canon Kingsmill Moore, several of which were of a high standard, but not all had reached full development.

The largest collection of fronds was shown by the President. These were all fully-developed specimens of good varieties. To one of these a certificate was unanimously awarded—a frond of robust and solid quality from his plant of *Lastrea propinqua crispa* Cranfield.

The Meeting closed with a hearty vote of thanks to the Chairman.

COMMITTEE MEETING

September 16th, 1947

A meeting of the Committee was held at 6, Poultry, London, E.C., on the 16th of September, 1947. The only members who were able to attend were the President, Professor F. E. Weiss, Mr. A. H. G. Alston, Mr. J. W. Dyce, the Rev. E. A. Elliot and the Hon. Secretary.

A circular letter had previously been sent to members of the Committee by the Secretary, in which the President described certain difficulties with which the Society was faced, particularly as a result of the loss during the war of seven of the officers, namely—Messrs. T. B. Blow, A. Cowan, the Rev. Canon Kingsmill Moore, Mr. J. J. Sheldon (Vice-Presidents), Dr. T. Stansfield (Treasurer), Mr. J. A. Sinclair (Auditor), Messrs. J. Lloyd and F. W. Thorrington (Members of Committee).

In the circular letter it was suggested that whatever other matters might have to be discussed it semed necessary (a) to appoint a treasurer *ad interim* (Mr. J. W. Dyce, who was elected to the Committee in July, 1939, and is a Bank Official was mentioned as willing to serve), and (b) to issue a further number of the GAZETTE (due to subscribers) in order to complete the record of the Society's business up to the suspension of its activities in October, 1939.

The members of the Committee unable to attend had either written to approve action as indicated under (a) and (b) above, or had raised no objection to it.

It was accordingly decided to appoint Mr. Dyce as Treasurer, and to issue the GAZETTE as soon as possible.

There was some discussion about the difficulties which would have to be overcome if the Society were to be efficiently carried on, but the Committee did not consider that it was within its powers to come to any major decisions which in its view must be left to a General Meeting. Information about the General Meeting, and perhaps some forecast of the matters which it might have to discuss, should be given in the GAZETTE.

A report of the meeting of the Committee was subsequently printed and sent out to all subscribing members.

COMMITTEE MEETING

held at 6, Poultry, E.C., on Tuesday, January 19th, 1948

The Committee met at the President's Office, 6, Poultry, E.C. on Tuesday, January 19th, 1948.

PRESENT.

In the absence of the President, Mr. W. B. Cranfield, owing to illness, the chair was taken by Mr. A. H. G. Alston, the Society's Editor. There were also present Messrs. Dyce (Treasurer), The Rev. E. A. Elliot, and Messrs. Greenfield, Macself and Pulham.

SECRETARY.

Mr. J. R. Pulham, who had been introduced by the President as the proposed new Secretary of the Society, was welcomed, and was at once elected as Secretary, in order that he might take part in the proceedings.

MINUTES.

The Minutes of the Committee meeting held on September, 16th, 1947, were read by the retiring Secretary, Mr. Greenfield, and were confirmed and signed by the Chairman.

NEW MEMBERS.

Mr. Pulham submitted a list of proposals for new members, the majority of whom had been secured by the President. These were unanimously elected *en bloc*.

MR. REGINALD KAYE.

The President had proposed Mr. Reginald Kaye, of Waithman Hardy Plant Nursery, Silverdale, as a member of the Committee. This was seconded by Mr. Greenfield, and carried unanimously.

MR. NORMAN HADDEN.

Mr. Pulham suggested that Mr. Norman Hadden, of West Porlock, Somerset, would be a useful member of the Society and Committee. He was instructed to get into touch with Mr. Hadden.

MR. GREENFIELD.

Mr. Greenfield expressed his willingness to serve on the Committee, although he was unable to carry on the

secretarial duties. He was unanimously elected to the Committee. The. Rev. E. A. Elliot expressed appreciation of Mr. Greenfield's work for the Society. The above appointments brought the number of ordinary members of the Committee up to eight, leaving two vacancies, and the meeting considered that they need not go further with the making of appointments. The questions of filling three vacancies amongst the Vice-Presidents, and completing the Committee, were left to the Annual Meeting.

HONORARY MEMBER.

Dr. J. Ramsbottom, Keeper of Botany, British Museum (Natural History), was elected an honorary member of the Society.

FINANCE.

Mr. Dyce, the Treasurer, presented a report on the financial position of the Society. On June 30th, 1939, the balance in hand was £55, and it was now £72. The future financial position was, however, uncertain, as it was impossible to forecast what it would be until an estimate of future costs could be arrived at. The Society was entirely without stationery and advertising matter, and Mr. Pulham was authorised to obtain what was necessary.

THE GAZETTE.

The issue of a Gazette, somewhat larger than usual, as suggested by the President, was approved.

NAME OF THE SOCIETY.

Mr. Macself suggested that the name of the Society be changed to "The British Fern Society." There was some difference of opinion on this question, which, however, was one that would have to be left to the decision of the General Meeting.

The Committee expressed its regret that the President was unable to be present, and sent a message of sympathy with him in his illness.

A vote of thanks to the Chairman closed the meeting.

OBITUARIES

WILLIAM BATHGATE CRANFIELD

William Bathgate Cranfield, President of the Society since 1920, died on Saturday, the 29th of May last, and on the following Wednesday was laid to rest in the family tomb at Lavender Hill Cemetery, Enfield. He had visited the Chelsea Flower Show and had had other engagements during the week, which had possibly over-tired him, but his death was unexpected. It is difficult to believe that he was in his ninetieth year. His physical condition might have been the envy of a man of seventy years, and, although for the last year or so he tired somewhat easily and was occasionally obliged to rest, his clarity of thought and power of organisation remained with him to the end. Most appropriately the only flowers at his funeral were his own paeonies, of which there were perhaps five hundred blooms.

Those of us who are aware of the late President's encyclopaedic knowledge of British fern varieties find it difficult to realise that he had a wide knowledge of plants in general, taking, perhaps, a special interest in daffodils and in paeonies, of which he had produced one of the finest varieties extant. He was a prominent member of the Horticultural Club and he served for many years on Floral Committee B of the Royal Horticultural Society. His services to horticulture were recognised by that Society when he was awarded the Victoria Medal of Honour in 1935. And yet horticulture was for him but a spare time pursuit, for he was partner in the firm of H. E. Foster & Cranfield, of Poultry, London, E.C., whose business is of an intricate and exacting nature. It is hardly surprising that he took few holidays and always looked forward keenly to the relaxation of our Annual Meetings and Excursions.

A brief account must be given of Mr. Cranfield's services to the Society. He took over the Treasurership in 1910. In 1918, on the death of Mr. C. T. Druery, Editor and Secretary, he was made Secretary. In 1920, on the proposal of Mr. Alexander Cowan, who had been President for ten years and wished to retire, Mr. Cranfield was elected President. After financial difficulties resulting from the first world war had

been surmounted, the affairs of the Society ran smoothly until the death in 1937 of Dr. F. W. Stansfield, the Secretary and Editor of the GAZETTE, and a great authority on British fern varieties. The burden of re-constituting the Society fell on Mr. Cranfield's shoulders, and largely through his efforts there was no serious break in the Society's activities. Naturally in the new circumstances Mr. Cranfield continued to guide the fortunes of the Society until the impact of the war involved a suspension of its work. During the late war no fewer than eight of the Society's officers died, some of those remaining had become enfeebled, and the work of re-constructing the framework of the Society proved exceedingly difficult and could be only tentatively and incompletely accomplished, pending authoritative decisions by a General Meeting. Fortunately, Mr. Cranfield was spared to us until he was able to complete these provisional measures for reviving the Society.

It is unnecessary to enlarge on Mr. Cranfield's skill in the raising and cultivation of ferns, his judgment of a fern's merits, his knowledge of the history of good varieties or his sympathetic interest in members' collections.

It is hard in a few words to pay adequate tribute to Mr. Cranfield's personal character. His commanding presence did not always reveal his kind and affectionate nature. Many instances of his generosity could be given, but he would have been the last to welcome such disclosures. Our summer gatherings for the Annual Meetings and fern-hunting excursions owed much to his sociability and lightly-carried learning.

Our best memorial to our President and friend will be continued and strong support of the Society, however diffident we may be in following the footsteps of outstanding members who have gone before us.

P. GREENFIELD.

W. B. Cranfield was born in London in March, 1859 and educated at Thanet College, Margate. He went to Enfield as a young man and there indulged in all kinds of sport—particularly walking, running and rowing. He was a sound judge of horses and had many stories to tell of his drives to and from the city. He hunted fairly regularly in middle-age

and won many trophies at neighbouring point-to-point races. During the late war, when I visited him at Enfield, he lamented the fact that his riding boots would no longer serve him, though he retained them as old and tried friends.

He was typical of the amateur naturalist of his generation in that he took a most wide interest in natural history. Horticulture was always his greatest hobby and at one time or another he specialised in auriculas, daffodils, irises, paeonies, as well as ferns. It was apparently owing to the influence of C. T. Druery and the Doctors Stansfield that he became an ardent collector and cultivator of ferns.

My acquaintance with him began just before the first world war. I had seen him at meetings of the Royal Horticultural Society and remarked on his resonant voice and laugh and his hearty and friendly manner with the members he knew ; he first spoke to me about some experiments on the germination of orchid seeds which the late J. Charlesworth was carrying out and in which I was concerned. After the war he became a Fellow of the Linnean Society and he was frequently at meetings with Dr. Stansfield, who had been elected at the same time (March 17th, 1927); I often contrived to mix their names, much to their amusement. In later years, as he became deaf, his attendance at the Linnean was much less frequent, but he always appeared when there was some special occasion. However, he paid more frequent visits to the Museum, and all the staff got to know his booming voice. His last visit was a short time before his end, and he was full of schemes for the revival and expansion of the British Pteridological Society. There was certainly no sign that either his mental drive or his critical faculties were affected by his great age, and his sense of humour remained strong. It is sad that these valued attributes should no longer be at the service of the Society over which he presided and whose concerns and future interested him so greatly.

J. Ramsbottom.

DARWIN LEIGHTON

Darwin Leighton, of Kendal, who died in July, 1943, joined the Society as lately as 1939, but he had long been interested in ferns. As a boy he had learnt something about

varieties from his father, who was a close friend of George Whitwell, for several years Hon. Secretary of the Society. Darwin Leighton was a nature lover and a climber, and had hunted for ferns both in this country and in Switzerland. He was of a cheery disposition and had a fund of anecdote. He quickly made friends with all the members he met at Chard in July, 1939, and it is sad that his membership of the Society has proved so short.

P. GREENFIELD.

JOSEPH LLOYD

Joseph Lloyd in earlier days was a farmer on land now forming part of the built-up area of Birkdale, Southport. He continued to live at Birkdale, and finding himself with time to spare took up the cultivation of ferns, with the encouragement of friends whose presents formed the nucleus of what, as his experience developed, ultimately became a very fine collection. His proudest day was when he won the Society's Trophy for the best group of ferns at the Southport Show in 1937. In the various classes of ferns at the Southport Shows, he was for several years a successful exhibitor. He maintained his interest in ferns until shortly before his death in December, 1942. Joseph Lloyd was of a friendly and generous disposition, and in his death the Society has lost a staunch supporter.

R.W. & P.G.

JOHN LOVELADY

John Lovelady, of Haslingden, became known as a fern enthusiast in the earlier days of the Society. He was elected a member in 1895, and with a few exceptions, attended the Society's meetings whenever they were held in the North of England. Ferns were an all-absorbing hobby with him. With the help of his many friends among fern growers he accumulated a large collection, and was a frequent exhibitor at the Southport Show, where he won many prizes. One of his exhibits was a fine *Athyrium* raised by himself. A friendly, good-hearted Lancastrian, John Lovelady was one of those devoted cultivators of British ferns that the Society can ill afford to spare.

R.W. & P.G.

JAMES A. SINCLAIR

James A. Sinclair, who died in August, 1940, at the age of seventy-six years, was elected a member of the Society in 1926 on the introduction of his friend, T. B. Blow. He subsequently attended many meetings of the Society, and, always carrying a camera, was regarded, one might almost say affectionately, as the Society's "Official Photographer." One of his photographs, in which he appears himself as the second figure from the right was reproduced in the GAZETTE for December, 1930. The Society was honoured to have Sinclair as its Photographer. He was probably the foremost dealer in high-class photographic apparatus in the World—his shop was in Whitehall and his business world-wide. He had been a pioneer photographer himself and in his earlier years had Blow as a collaborator, particularly in connection with the Bromoil Process once popular among artistic photographers. He travelled a good deal, visiting among other countries, France, Northern Africa and India. But it was not as a spruce business man or a great traveller that the Society knew him. He found the Society's meetings a welcome relaxation and there was no more genial member of the company than Sinclair. He claimed no extensive knowledge of ferns, and it was characteristic of him that after being elected Vice-President in 1936 he offered to withdraw, in the interests of the Society, as he put it, when he realized at the Meeting in 1938 that there was a particularly large attendance of experienced members, one of whom might well take his place. He continued, however, to serve the Society as Auditor. Sinclair will be sadly missed by all who knew him.

P. GREENFIELD.

WILLIAM WILSON

William Wilson was a founder member of the Society, which originated at Kendal in 1891 and was known as the Northern British Pteridological Society until the present title was adopted in 1892. He served for some years on the Committee and acted as Treasurer from 1903 to 1910. Although of late years his activities were considerably curtailed—he was 81 when he died—he managed to maintain a small garden and to cultivate many choice varieties of ferns.

He was a keen student of ferns, at one time in association with his friend George Whitwell, a former Secretary of the Society ; and his hobby was a great solace to him when, as his age advanced, he was unable to go far afield. Quiet in manner and of a gentle disposition, William Wilson was greatly liked by all members who knew him and they part with him regretfully.

R.W. & P.G.

THOMAS BATES BLOW, F.L.S.

By the death of Mr. Blow, who passed away in January, 1941, at the advanced age of 87 years, the Society lost one of its most active supporters.

For many years he served on the Committee and invariably attended all the annual meetings and hunting excursions held by members of the Society—he was usually accompanied by the late Mr. Sinclair.

A lengthy description of his garden and fern collection and of his career appears in No. 7 of Vol. 7 of the BRITISH FERN GAZETTE. He was more interested in hunting for species rather than varieties. The foundation of his fern collection dated from 1857 with gifts from Anthony Parsons and Henry Fitt supplemented by a number of the older types which were grown at Danesbury and from the Frith at Welwyn. The collection was supplemented by the many seedlings in the *divisilobum* and *plumosum* divisions of *Polystichum angulare* raised at Sale. He also raised a large number from spores which were distributed with outstanding generosity. His garden was of considerable extent and ferns abounded everywhere.

As a botanist of considerable ability he collaborated with Reginald Hine in the preparation of the *Natural History of the Hitchin Region*. He was an old member of the Photographic Field Club and Camera Club. His collection of Japanese prints and Kakemono and a large number of Japanese sword mountings were well known and were dispersed after his death.

Not the least of the events in Mr. Blow's long and interesting life were his activities as a member of the British Committee of the French Red Cross during the whole

of the 1914/18 War and in relief work for those returning to their homes after the war. His services were recognised by the President of the French Republic who invested Mr. Blow with the Legion of Honour with the rank of Chevalier for his offices.

He will long be remembered by older members of the Society for his generosity and kindly companionship.

SECRETARIAL

The following second-hand books, in good condition, are available for sale, post free:—

	s.	d.
A History of British Ferns, by E. Newman, published in 1854, size 10¼ins. x 6½ins.	3	0
The Book of British Ferns, by C. T. Druery, published 1901	3	6
The Ferns of the Lake Country, by W. J. Linton. First Edition 1865	3	0

Members may like to know that there has been a re-issue of *British Ferns and Where Found,* by the late E. J. Lowe. The book, which formed part of the Young Collector's Series, was originally published by Swann, Sonnenschein & Co., in 1908. The remainder of the stock has recently been bound in limp cloth and re-issued by George Allen and Unwin Ltd., at about 2s. per copy.

The late Mr. Lowe was a prolific writer on ferns generally, who held very strong views on certain subjects (multiple parentage) which never obtained acceptance. The book in question is stated to contain descriptions of 1,861 varieties ; a large percentage of these existed in name only—many others were quite unworthy of record, but others are fine varieties, many of which, however, have been lost to cultivation. Several are illustrated in the nature prints published by the late Colonel Jones. In the preparation of the book the author received considerable assistance from the late Dr. Stansfield. The grouping and sectionising is excellent and facilitates identification.

The Secretary will be glad to consider the purchase of complete sets or any individual numbers of Vols. I to V of the GAZETTE. Older members particularly may be able to trace unwanted copies.

OUR FRONTISPIECE

Polystichum angulare plumosum grande (A.M., R.H.S., Oct. 7, 1947).

Description from R.H.S. Journal:—

> "An unusually fine form of the 'plumosum' section of this hardy fern, found wild in Dorset by the late James Moly. The fronds are spreading, up to nearly 3 feet long, the stipe covered below with brown chaffy scales. The pinnae reach a length of over 4 inches, each being sub-divided into about sixteen pairs of deeply incised, lanceolate pinnules."

The above is the most robust plumose form extant. Most of those known are barren or at the best sparsely fertile and can, therefore, be increased only vegetatively.

A VISIT TO BIRDBROOK

Our members will recall the wonderful collection of British ferns exhibited by Mr. Robert Bolton at the Royal Horticultural Society's show on August 17th, 1937, for which he received the Society's Gold Medal, the highest distinction in the power of the R.H.S. to bestow. It was when accompanied by the late Mr. C. T. Druery that I first saw Mr. R. Bolton's collection when he was living at Warton, and that of his uncle, Mr. Thomas Bolton. In these two collections we saw many of the original wild finds, mostly collected in the Lake District. Fine as these collections were they were comparatively insignificant in comparison with the two collections of father and son at Birdbrook, but here, I regret to record, a similar tragedy has befallen Mr. R. Bolton's fernery as happened to my own, viz., the collapse of the roof during the heavy snowfalls and gales of last winter, submerging the ferns with collapsed roof-shelter, injuring many specimens beyond recovery and remaining a jumble of wood, iron and

snow frozen solid for weeks on end. The results in both cases were lamentable ; many rare specimens have been lost which are quite irreplaceable.

My visit was made on November 26th, 1947, and though fine, there was a very cold wind and the time available was far too short to accomplish more than a cursory inspection.

Extensive as the two collections are, these are limited to the best variety in the species grown.

In *Phyllitis Scolpendrium* the *crispums* were simply magnificent:—*nobile,* " Christopher Robinson," *speciosum,* a very dark-coloured form stated to be a cross between *Hookeri* and a *crispum* raised by Mr. R. Bolton ; and the narrowest form that I have ever seen which was raised from Cropper's *fimbriatum,* which I believe originated from Sale, but was shown by Cropper when the R.H.S. Show was held in the Temple Gardens. The frond I gathered of *nobile* is nearly six inches wide; that of the narrow form about an inch, which, I think, constitutes the extreme in both cases. There were *grandiceps* forms in endless variety. In *Polystichum aculeatum* were noted *plumosum* Green, Druery's *pulcherrimum,* several *gracillimums,* and two forms I had never seen before, one a small plant reminiscent of *flabellipinnulum.* In *angulare,* Sale had yielded up dozens of those beautiful plumose *divisilobums* raised originally from the Jones and Fox *densum laxum* and *robustum* (which is, referred to on page .). The only plant which was not happy was *Esplan* (of which there are many pseudo-forms about). These were really wonderful, excelling in Mr. R. Bolton's collection and doubtless derived from the parental group.

Athyrium filix-Foemina had, of course, died down, but the fronds of *Clarissima, Victoriae* and some others were still showing evidence of robust health. The best to be seen were *Polypodium Vulgare,* and here any attempt at description falters.

It has been my privilege to see many collections, but never have I seen such diversity or extent. The *cambricum* section was simply overwhelming, many wild finds I had never seen before were there in huge clumps, some of which are illustrated in Col. Jones's nature prints.

To go through the two collections with any degree of thoroughness would require as many long days as I had short hours.

I am looking forward to another visit under more congenial conditions, when it may be possible to compile a more comprehensive record of the two collections.

W. B. Cranfield.

The following ferns which were exhibited by the President received Awards of Merit from the Royal Horticultural Society and are described in the R.H.S. Journal for January, 1948.

Phyllitis Scolopendrium crispum, "Christopher Robinson," A.M., October 21st, 1947.

Polypodium vulgare pulcherrimum, May's form, A.M., November 4th, 1947.

Polystichum angulare plumosum grande, A.M., October 7th, 1947 (the subject of the frontispiece).

POLYSTICHUM ANGULARE PLUMOSUM DIVISILOBUM

By common consent the varieties in the above section comprise the élite of this species. The original forms, *densum, laxum,* and *robustum,* were raised in collaboration by the late Col. A. M. Jones and the late Dr. Fox from a *decompositum* found by the latter, not, as incorrectly stated a wild find of Moly's.

Several generations were raised by H. Stansfield, of Sale, the late Dr. Stansfield, Messrs. Perry, Bolton and others, to which it has been found impossible to give varietal names. In private collections anything outstanding has been distinguished by a number or the name of the raiser.

Broadly speaking they have branched into three sections *obtusum, acutum* and *dissectum.* The prevailing characteristics of the first-named are extreme density and the production of numerous bulbils sometimes extending more than half the length of the frond rendering multiplication a simple matter.

Those in the second section are more finely divided, whilst the *dissectum* nearly approaches the original *Baldwinii*.

Some very beautiful forms were raised by the late Dr. Stansfield, but their constitution was not robust and most of them no longer exist.

Several *pulcherrimums* also appeared, some of which are still in existence. The loss of some of these beautiful varieties was largely attributable to Dr. Stansfield's illness and death, followed by that of his son. Whilst it is highly improbable that such varietal forms will be found as wildlings, the womb of nature is inexhaustible ; what she has produced before she will probably do again. If spores from the best forms found wild be sown there is always the possibility of raising something of surpassing beauty.

W.B.C.

THE HART'S TONGUE

(PHYLLITIS SCOLOPENDRIUM)

The above, one of our commonest British species, occurs literally in hundreds of thousands principally on limestone formations and has varied to an extraordinary extent.

The most attractive is probably the *crispum* section of which many examples have been found as wildlings. It is a general experience that once a fern has departed from the normal, succeeding generations raised from its spores will continue to advance in variation. It would appear extraordinary that a normal type should possess the faculty of producing a *crispum,* but it must be borne in mind that under the most favourable circumstances only a minute proportion of the spores which are annually shed ever germinate. Those which have been found wild are usually named after their finders, and whilst they all partake of the same character they usually differ only sufficiently to be distinguishable by an expert.

The accompanying illustration probably illustrates the extreme divergence in the variety. The larger form *nobile* was found wild by Mr. T. Bolton on Warton Crag near Carnforth. The width of the normal frond is just under six inches ; the narrow form was raised by Mr. R. Bolton from



The Hart's Tongue (Phyllitis Scolopendrium)

crispum fimbriatum raised by Cropper from a plant obtained from Sale. It was exhibited when the R.H.S. Shows were held in the Temple Gardens. Cropper's fern is occasionally sparsely fertile and the plant illustrated is the best of a large series raised by Mr. R. Bolton. It is very rarely that any hunter lights on a normal form which should have the faculty of producing *crispums,* but Mr. Bolton is the fortunate possessor of such a plant.

It is recorded that some fifty *crispums* were found in one lane and many of them were deposited in the Clifton Zoological Gardens, but they were not the true plumose type which is barren, and, attractive as the fertile *crispums* may be in the young stage, as soon as they produce spores they lose their *crispum* character and become nondescript.

The late Dr. Stansfield prepared a glossary of generic and specific names with their interpretation as applied to the nomenclature adopted for varietal forms. These appeared in Volume 4 of the BRITISH FERN GAZETTE which is long out of print. He also prepared a number of corrections of errors occurring in C. T. Druery's *Book of British Ferns and Their Varieties,* which was published by George Routledge & Sons. It is thought that some members might like to acquire copies at cost, if a sufficient number of applications is received to justify the expenditure by the Society.

W.B.C.

BRITISH PTERIDOLOGICAL SOCIETY

List of Members, July 17, 1948

Honorary Members

CURTIS, CHARLES H., J.P., V.M.H., F.L.S., Editor *The Gardeners' Chronicle*, 33, John Street, Theobalds Road, London, W.C.1.

HAY, THOMAS, V.M.H., M.V.O., Stoatley Cottage, Bunch Lane, Haslemere, Surrey.

MOORE, SIR FREDERICK, F.L.S., Wellbrook House, Rathfarnham, Co. Dublin

PRESTON, F. G., A.H.R.H.S., Botanic Gardens, Cambridge.

RAMSBOTTOM, J., O.B.E., Keeper of Botany, British Museum (Natural History), Cromwell Road, London, S.W.7.

WEATHERBY, DR. C. A., Gray Herbarium, Harvard University, Cambridge, Mass, U.S.A.

Subscribing Members

ABERCONWAY, THE RT. HON. LORD, Bodnant, Talycan, Denbighshire.

ADKIN, F. N., River Knowle, Northam, Devon.

ADLARD, J. K., F.L.S., F.Z.S., Laydeland, Chalk Lane, East Horsley, Surrey.

ALSTON, A. H. G., M.A., F.L.S., Department of Botany, British Museum (Natural History), Cromwell Road, London, S.W.7.

ANDERSON-KOTTO, MISS IRMA, c/o John Innes Horticultural Institute, Mostyn Road, Merton Park, London, S.W.19.

ASKEW, W. F., Fern Nursery, Grange, Keswick, Cumberland.

ATKINSON, F., Lake Side Cottage, Keswick, Cumberland.

BARR & SONS, 11, King Street, Covent Garden, London, W.C.2.

BENTLEY, JOSEPH, LTD., Barrow-on-Humber, Lincs.

BIGLAND, J. W. S., 20, Parkfield Road, Bebington Wirral, Cheshire.

BOLTON, ROBERT, F.R.H.S., Birdbrook, Halstead, Essex.

BOLTON, THOMAS HENRY, F.R.H.S., Birdbrook, Halstead, Essex.

BOSTON, W. T., The Mansion House, E.C.4.

BOWLES, E. A., M.A., V.M.H., F.L.S., F.Z.S,, Myddleton House, Forty Hill, Enfield, Middlesex.

BOWLES, H. E., C.C., The Larches, Park Close, Rickmansworth, Herts.

BRITISH MUSEUM, THE (Natural History), Cromwell Road, London, S.W.7.

BRITTON, MRS. J. H., M.B.E., Shortwood Lodge, Pucklechurch, Bristol.

BROOKFIELD, JOHN, Nurseryman, Stamford Road, Birkdale, Southport, Lancs.

Brown, Mrs. D., Clifton, Warren Road, Donaghadee, Belfast.
Brown, Henry, Stocks, Aldbury, Tring, Herts.
Brunt, Arthur, Ferndale, 39, Folly Lane, Swinton, Manchester.
Burton, Frank, The Bailey House, Hildenborough, Kent

Calcott-Pryce, Capt. E., Durring Hall, Harlow, Essex.
California, University of (The Library), Berkeley, California, U.S.A.
Carpenter, H. M. M., Little Fynches, The Street, Buntingford, Herts.
Chew, R., Dove Nest, Windermere, Westmorland.
Cheston, Arthur Percy, Holly Bush Wood, Berkhamsted, Herts.
Churchill, Mrs. A. M., 119, Tilwood Road, Fishponds, Bristol.
Clarke, T. F., 72/78, Fleet Street, London, E.C.4.
Cochran, John, 5, Nursery Street, Kilmarnock, Ayrshire.
Cochrane, Anthony, Kew House, Duff Avenue, Elgin, Morayshire.
Constable, W., The Lily Gardens, Southborough, Tunbridge Wells, Kent.
Cordrey, C., 187, Bedfont Lane, Feltham, Middlesex.
Courthope, The Rev. R. A., m.a., The Rectory, Donhead St. Mary, Shaftesbury, Dorset.
Cranfield, Lt.-Col. S. W., At Tankerton Hotel, Tankerton, Kent.

Davies, W. T., Gwyndre, Port Dinorwic, Caernarvonshire.
Dempster, R., Carresden, Dumfries, Scotland.
Dixon, J. Dargue, c/o Mrs. Day, 20, Homfray Grove, Morecambe, Lancs.
Dunston, Captain Ambrose, Burltons, Donhead St. Mary, Shaftesbury, Dorset.
Dyce, James W., 4, Mayfair Gardens, Woodford Green, Essex.

Eire, The Government Stationery Office (Publications Branch), Dublin.
Elliot, The Rev. E. A., m.a., The Vicarage, South Stoke, Reading, Berks.
Eyre, Mrs. Dorothy, Wye Valley Nursery, Chepstow, Mon.

Fisher, C. H., Lower Drabbington, Thornbury, Bromyard, Hereford.
Fletcher, B., j.p, The Yews, East Hagbourne, Didcot, Berks.
Francis Charles, Old Barns, Newchapel Road, Lingfield, Surrey.

Gandy, J., The Nursery, 29, Clifford Road, Southport, Lancs.
Gibbs, L. W., 28, Grimsdyke Road, Hatch End, Middlesex.
Gispert, G. A. M., Westminster Bank, Ltd., 134, Aldersgate Street, London, E.C.1.
Good, Professor R. D'O., m.a., f.l.s., Department of Botany, University College, Hull, Yorkshire.
Gordon, Alfred, The Elms, Ringmer, Lewes, Sussex.
Greenfield, Percy, Beech Bank, Stuart Road, Warlingham, Surrey.
Greenfield, H. F., Beech Bank, Stuart Road, Warlingham, Surrey.
Grotian, Frederick, Branksome Dene, Westbourne, Bournemouth, Hants.
Grubb, C. W., Brookfield Nursery, Bolton-le-Sands, Carnforth, Lancs.

Hall, Alva J., Victoria Nursery, Victoria Road, Harrogate, Yorkshire.
Hamilton-Wedderburn, Lt.-Col. H., o.b.e., 15, Chelsea Square, London, S.W.3.

HEALEY, MRS. J. R., Lily Hill Nursery, Bracknell, Berks.
HAWKINS, FRANK, 41, Smitham Downs Road, Purley, Surrey.
HOLT, C. W., F.R.H.S., Grove Lane Nursery, Timperley, Altrincham, Cheshire.
HOLT, T. F. C., Rabys, Newchapel Road, Lingfield, Surrey.

JACKMAN, G. & SON, The Nurseries, Woking, Surrey.
JACKSON, FRED, Knotts View, Stonethwaite, Borrowdale, Keswick, Cumberland.

KAYE, REGINALD, Waithman Hardy Plant Nursery, Silverdale, Carnforth, Lancs.
KENTUCKY UNIVERSITY, Department of Botany, Lexington, Kentucky, U.S.A.
KNOX, SIR ALFRED, K.C.B.,, C.M.G., Binfield House, Binfield, Bracknell, Berks

LAURIE, G. F., Laurel Villa, Kenmure Avenue, Bishopbriggs, Glasgow.
LAZARUS, B. A. M., Lowlands Farm House, Newchapel, Lingfield, Surrey.
LEAK, G. W., 51, Grand Avenue, Hassocks, Sussex.
LEGGATT, DUDLEY H., Gentlemen's Row, Enfield, Middlesex.
LOCAN, L. T., Grand Hotel, Southampton Row, London, W.C.1.
LONG, MRS. A., Trenoweth, St. Keverne, Cornwall.
LYLE, NEIL C., The Gardens, Donibristle Park, Inverkeithing, Fife.

MACSELF, A. J., 114, Hamilton Road, Reading, Berks.
MACWATT, DR. JOHN, Morelands, Duns, Berwickshire.
MALING-WYNCH, MRS. V., F.R.H.S., Pine Hill, Camberley, Surrey.
MANTON, PROFESSOR IRENE, B.A., PH.D., Department of Botany, The University, Leeds.
MARDELL, ALFRED, East Lodge Gardens, Enfield Chase, Middlesex.
MARSH, MISS S. A., Glenlyon, Holywood, Belfast.
MEADE, JOSEPH, Old Connaught, Bray, Co. Wicklow, Eire.
METCALFE, COLONEL, S. A., O.B.E., T.D., D.L., Capel House, Waltham Cross, Herts.
MILLS, SIR FREDERICK, St. Hither Hyes, Rushlake Green, Heathfield, Sussex.
MONRO, GEORGE, C.B.E., V.M.H., The Red House, Hendon Lane, Church End, Finchley, London, N.3.

NAYLOR, E., Corner Garth, Leadhall Lane, Lucas Road, Harrogate, Yorkshire.
NEVILLE, GUY, Southminster Hall, Southminster. Essex.

OLIVER, ARTHUR, Tower Road, Darnick, Melrose, Roxburgshire, Scotland.

PENNY, R. S., 10, Vine Street, Greaves, Lancaster.
PERCY, C. P., Inglewood, Kemnal Road, Chislehurst, Kent.
PERRY, AMOS, V.M.H., Heath Lodge, Weeley Heath, Essex.
PULHAM, J. R., HON. A.I.L.A., 71, Newman Street, London, W.1.
RANDALL, NEVILLE, Haldon Grange, Exeter, Devon.
RANSOM, R. F., Wymondley Bury, Hitchin, Herts.

Reeves, Hugh, Gillingham, Hartfield, Sussex.
Richardson, J. L., Prospect House, Waterford, Eire.
Richardson, R., 16, Commonside, Ansdell, Lytham St. Annes, Lancs.
Ridge, Dr. Leslie, Carlton House, Enfield, Middlesex.
Robertson, A., 22, Parkstone Avenue, Hornchurch, Essex.
Rossdale, P. A., B.A., LL.B., 34, Bedford Row, London, W.C.1.
Rowland, Alderman Sir F., 56, Moorgate, London, E.C.2.
Rowlands, S. P., M.B., B.S., Abbeyville, 44, Beckett Road, Doncaster, Yorkshire.
Rowlatt, Miss B., Croyland Hall, Wellingborough, Northants.
Rugg, H. G., Dartmouth College Library, Hanover, New Hampshire, U.S.A.
Rutherford, Sir D., J.P., Powis Court, Bushey Heath, Herts.

Schofield, E. P., Messrs. Joseph Bentley, Ltd., Barrow-on-Humber, Lincs.
Shackleton, Mrs. C. M., Willows, Bisley, Surrey.
Sherrin, W. R., A.L.S., South London Botanical Institute, 323, Norwood Road, London, S.E.24.
Simkins, Mrs E. Kate, Capel House, Waltham Cross, Herts.
Smith, Ewart G., 147-151, High Street, Christchurch, New Zealand.
Smith, Mrs. G. A., Pear Tree Cottage, Signal Hayes Road, Walmley, Sutton Coldfield, Birmingham.
Smithers, Major A., Morleys, Great Hallingbury, Bishops Stortford, Herts.
Stephens, Edward J., Rose Lawn, Digswell, Welwyn, Herts.
Stern, Colonel F. C., M.C., O.B.E., V.M.H., F,L,S,, Highdown, Goring-by-Sea, Worthing, Sussex.
Sudell, Richard, F.I.L..A., A.R.H.S., Durford, Sandy Lane, Cobham, Surrey.

de Tavel Dr. F., 22, Schosshaldenstrasse, Bern, Switzerland.
Trotter, R. D., Leith Vale, Ockley, Surrey.
Tucker, J. W., 18, St. John's Road, Exeter, Devon.

Walker, Miss D. E., 14, Monks Dene Gardens, Sutton, Surrey.
Wallace, R. W., V.M.H., Hon.A.I.L.A., The Old Gardens, Tunbridge Wells, Kent.
Warren, James, Flat 2, 13, Bruton Street, London, W.1.
Watts, L. H., Starvecrow House, Tonbridge, Kent.
Weiss, Professor F. E., F.R.S., F.L.S., 73, Longton Avenue, Sydenham, S.E.26.
Westley, Edwin, 2865, Nina Street, Lamanda Park, Pasadena, California, U.S.A.
Whiteside, R., 477, Marine Road East, Morcambe, Lancs.
Wilson, Guy L., The Knocken, Broughshane, Co. Antrim.
Wiper, Ernest, 2006, West 48th Avenue, Vancouver, British Columbia, Canada.

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THE BRITISH PTERIDOLOGICAL SOCIETY

THE SOCIETY originated, in September 1891, in the Lake District with headquarters at Kendal. Its members were, however, distributed throughout Great Britain and Ireland, whilst some few reside in the Dominions and U.S.A. Its declared objects were :—

(i) The Study of Species and Varieties of British Ferns ;

(ii) The Recording of Information with regard to Ferns generally.

The British Fern Gazette was established in September 1909, publication being quarterly until 1914. After the war publication was restricted to two issues per annum on account of the increased cost of printing and the decrease in the number of members. It ceased publication in 1939, but an issue is now in print, and it is hoped to continue it periodically.

Members are invited to communicate with the Hon. Secretary on subjects of interest with regard to British Ferns.

Certificates are awarded to new ferns of distinction of which plants or characteristic fronds are shown at the Annual Meeting for adjudication. The Annual Meeting is held usually in August or September, at some place where ferns are abundant and from which excursions for fern hunting can conveniently be arranged. These excursions are an important feature of the Society's activity.

Fronds may be sent to the Hon. Secretary to be identified or named at any time.

A collection of British Ferns is being formed with the help of the Society in the Royal Horticultural Society's Gardens at Wisley.

The Society is affiliated to the Royal Horticultural Society.

The Committee is endeavouring to increase the membership of the Society and, through this and by other means, to encourage the more general cultivation of the varieties of British Ferns. Any lover of horticulture is eligible for membership and the subscription is 10s. per annum (due in advance at or immediately after the Annual Meeting), which entitles members to copies of *The Gazette*.

The Hon. Treasurer or Hon. Secretary will be pleased to supply members who may desire it with Bankers' Orders for the convenient payment of subscriptions.

Further particulars may be obtained from the Hon. Secretary,

J. R. PULHAM, Hon. A.I.L.A.,
71, Newman Street,
London, W.1.

Telephones : Museum 0515; Edgware 4028

THE ROYAL HORTICULTURAL SOCIETY

FOR nearly 150 years The Royal Horticultural Society has been the leading Society in British Horticulture, and is now the largest in the world. For an annual subscription of two guineas a Fellow is kept in touch with all its operations, has the right to attend all its shows, to visit its gardens at Wisley, and to obtain advice on horticultural matters. Larger subscriptions carry increased privileges. All persons who are interested in horticulture are eligible for membership, and full particulars may be obtained on application to:

THE SECRETARY,
THE ROYAL HORTICULTURAL SOCIETY,
VINCENT SQUARE, LONDON, S.W.1

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July, 1949

EDITED BY

Revd. E. A. ELLIOT, M.A.

South Stoke Vicarage,
Near Reading, Berks.

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THE BRITISH PTERIDOLOGICAL SOCIETY

President: A. H. G. Alston, B.A., F.L.S., Dept. of Botany, British Museum (Nat. Hist.), Cromwell Road, London, S.W.7.

Hon. Secretary: J. R. Pulham, Hon. A.I.L.A., 71, Newman Street, London, W.1

Hon. Treasurer: J. W. Dyce, 45, Norbury Crescent, Norbury, London, S.W.16



Scolopendrium Vulgare Crispum Subfimbriatum Cristatum
(Award of Merit, 26/8/48)

THE
BRITISH FERN GAZETTE
NEW SERIES.

VOL. VII. JULY, 1949. No. 9.

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EDITORIAL.

It is with deep regret that we record the death of Mr. Robert Bolton, and the loss of another President, and of one so well and widely known in the garden world. His knowledge of fern varieties was unsurpassed, and his collection of them equalled by few, if any, to-day. We are glad to know, as stated on another page, that these plants will not be dispersed but are to remain in hands long associated with their cultivation.

Our Editor, Mr. Alston, has found he must resign this office ; we are fortunate, by his election as President, to retain his interest and scientific outlook.

Your new Editor has none of the qualifications of his predecessors and can only claim a respectable length of membership, with a vigorous enthusiasm for ferns, and for the Society.

We are a small and scattered community ; an increase in numbers is something in which every one of us can help ; the GAZETTE can do much to bring and help us together, and in this also, members can do much to assist. Correspondence, notes, questions, criticisms, suggestions for articles—these are some of the things we hope, and quite confidently ask for.

E. A. ELLIOT.

OCT 24 1949

in a few days. It is hoped in future to issue two numbers yearly, and members are invited to send articles for inclusion to the Editor.

It has not yet been able to arrange any Fern-hunting expeditions, but it is hoped that one or two may be possible in the not very distant future.

It was hoped at one time that the Annual Meeting might have been held in connection with one of these expeditions, but it has not been possible this year. Owing to several members of the Committee and Officers being in the South, the Annual Meeting is being held in London. There are several vacancies on the Committee, which members will be asked to fill at the Annual Meeting, when it is hoped that members of the Society in Fern districts will be given a place on the Committee.

The membership keeps steady, but it is hoped that every member will do his or her utmost to bring in new ones, by not only endeavouring to rope in other Fern lovers, but by using every endeavour to spread the interest in Fern culture amongst those who may not already be interested.

Your Committee wishes to express its appreciation of the hard work and enthusiasm put in and displayed by the Society's Officers, and it sincerely hopes that this, coupled with an increasing membership, will result in the Society taking its rightful place amongst the other Specialist Horticultural Societies.

Signed, on behalf of the Committee,

J. R. PULHAM,
Hon. Secretary.

The Treasurer presented his Annual Report as follows :—

Receipts				Expenditure			
1948	£	s.	d.		£	s.	d.
June 30th							
Balance in hand ..	66	0	2	Cost of Gazette ..	25	8	6
Subscriptions ..	40	1	0	Stationery	2	14	6
Sale of Gazettes ..		16	0	Hire of R.H.S. Room for Committee Meeting		7	6
				R.H.S. Affiliation for 1948	2	2	0
				Ditto 1949	2	2	0
				Stansfield medal for presentation ..	1	15	0
				Treasurer's expenses	2	4	9
				Balance in hand ..	70	2	11
	£106	17	2		£106	17	2

Election of Officers.

PRESIDENT—Mr. A. H. G. Alston was unanimously elected President on the motion of Professor Weiss, seconded by Mr. P. Greenfield.

PRESIDENTS-VICE—The following were unanimously elected Vice-Presidents on the motion of Mrs. Healey, seconded by Mr. Pulham :

Professor Weiss	Mr. R. Whiteside
Revd. E. A. Elliot	Mr. Tom Bolton
Miss Manton	Mr. A. J. Macself

EDITOR—The Revd. E. A. Elliot, M.A.

TREASURER—Mr. J. W. Dyce.

HON. SECRETARY—Mr. J. R. Pulham, Hon.A.I.L.A.

AUDITOR—Mr. Richard Temple.

COMMITTEE—

Mrs. J. R. Healey	Mr. J. Dargue Dixon
Mrs. C. M. Shackleton	Mr. P. Greenfield
Dr. S. P. Rowlands, M.B., B.S.	Mr. Reginald Kaye
Mr. C. Cordray	Mr. John Brookfield

Cranfield Slides.

The Secretary reported that he had several boxes of Fern slides belonging to the late Mr. W. B. Cranfield. It was suggested that Mr. Macself should examine them, and any which might be useful to the Society should be kept; the remainder to be handed over to the R.H.S. for them to destroy or keep as they may think fit.

Name of Society.

Mr. Macself suggested that the name of the Society be changed to "The British Fern Society." It was resolved to ask the members of the Society for their opinion and to bring the matter up for discussion at the next Annual Meeting.

SUBSCRIPTIONS and "THE GAZETTE."

It has been decided to send this issue of the "Gazette" to all Members, but to point out that future issues cannot be sent to Members whose Subscriptions are in arrears. It is, however, hoped that it will be unnecessary to take this action, and that this reminder may have the effect intended and desired.

OBITUARY

ROBERT BOLTON

The name of Bolton has been known in the North of England for generations among devotees of the cult of ferns, and no doubt Robert Bolton's love of ferns was to some extent inherited. His pre-eminence as a cultivator can be gauged from a perusal of an appreciative account of a visit to his fernery which appeared in the last number of the GAZETTE, and it is perhaps hardly necessary to add that he had that eye for a good and beautiful fern which is possessed only by the expert.

When the Society lost its President in May, 1948, there was an unhesitating desire on the part of experienced members of the Society that, if possible, Robert Bolton should succeed him. It was in fact known to the writer that the Stansfield Memorial Medal would have been awarded to him but for the War; and there is no doubt that if Mr. Cranfield had nominated a successor, it would have been Robert Bolton.

But he was then nearly 80 years of age and, like many warm-hearted people he was prone to suffer from overstrain, and had recently been greatly distressed by the loss of his devoted wife.

In such conditions it was only after much hesitation that he accepted office, and the Society owes him a deep debt of gratitude for his support at a crucial moment in its history. To some extent the task of looking after the Society seemed to cheer him, and he even went so far as to scheme a fern-hunting expedition for us, in which he intended to join. It was with consternation and grief that we heard of his death on the 26th of March.

When the Committee asked him to accept office as President, the opportunity was taken to award him the long overdue Stansfield Memorial Medal. About the same time he was awarded the Victoria Medal of Honour by the Royal Horticultural Society. Thus at the close of his life he held the highest honours for ferns and flowers.

It is a great satisfaction to hear that his fine collection of ferns, which, as many members know, he grew as an amateur, will not be dispersed; but is to remain in the capable hands of his son Mr. T. H. Bolton, for whose continued success in the cultivation of ferns and flowers we offer our best wishes.

P. GREENFIELD.

SECRETARY'S NOTES.

Members are reminded that the Society now subscribes as an affiliated Society to the Royal Horticultural Society, and as such, has two transferable tickets, which admit to the fortnightly Shows in either of the R.H.S. Halls (in whichever one the Shows are held), and to the R.H.S. Gardens at Wisley, where the collection of the late Mr. Cranfield's ferns now are.

These tickets will gladly be lent to any member who wishes to use them. Application should be made to me some few days before the required date and should be returned to me immediately after use.

We have now lost two Presidents in a short space of time, both keen enthusiasts in everything appertaining to Ferns, and no more fitting memorial to them would be possible than a dissemination of the cult of Fern culture.

Now that the late Mr. Cranfield's collection is at Wisley, where it will be seen by very many more keen Horticulturists, this should do much towards creating a greater interest, reflecting itself, it is hoped, in a greatly increased membership of the British Pteridological Society.

For the benefit of those members of the Society who have not visited Wisley, it may be of assistance if I mention that the best way to reach the Gardens is by Green Line Coach (for Guildford) from Victoria. The conductor will put visitors down at a provisional stop within 5 minutes walk of the Gardens.

The Hut Hotel is but a few minutes distant, where luncheons and teas can be obtained. (N.B.—Picnic luncheons and teas are not allowed in the Wisley Gardens.)

BACK NUMBERS OF THE GAZETTE.

The Society has a stock of back numbers of the GAZETTE available for purchase by members. It is felt that many members may like to complete their collection of GAZETTES. If so, the Secretary will be pleased to send any which may be available, at 6d. per copy for not less than six issues, post free.

OUR FRONTISPIECE

The two photographs reproduced were sent by Mr. Robert Bolton and are of a Scolopendrium raised by him, and of another owned and cultivated by him.

The selection of these two plants for illustration shows the true North Country and Midland love for the Hart's tongue ; and gives too, a good idea of the care bestowed upon them as on all Mr. Bolton's ferns. The first was a chance sporeling which came up in a batch, and eventually secured an Award of Merit from the Royal Horticultural Society in 1928.

The other commemorates Mrs. Stabler, its finder, the wife of Mr. Stabler, two keen fern-hunters, some sixty years ago in the Lake District.

It is to Mr. R. Bolton, in part, that we owe the valuable historical article by Mr. R. Whiteside ; as it was suggested to the writer by our late President, and we are sure members will like to have an authentic account written by the last original member at the age of 82.

RARE AND INTERESTING FERNS.

Some, I am afraid, are lost, others are nearly so. It would be interesting to know if any member has got any of the following:—

Asplenium	Inciso Crispatum (Clementii)
,,	Confluens (Stabler)
,,	Fontanum
Polypodium	Grandiceps (Parker)
,,	Serra (Wilson).

R. Bolton.

NAMES OF TWELVE BEAUTIFUL POLYPODIUMS.

Willharris, Cambricum, Grandiceps (Cowan), Grandiceps Fox, Pulcherrimum (Barnes), Pulcherrimum (May), Hadwinii, Barrowii, Omnilacerum, Falcatum, Semilacerum, Cornubiense Elegantissimum.

R. Bolton.



Scolopendrium Crispum Stablerae

FERNS IN IRELAND

By R. Lloyd Praeger.

Ireland is a ferny country. This is not altogether because it possesses a much larger number of species in proportion to its size than does Great Britain. Ireland has some 33 distinct species, Britain about 40 : for flowering plants the ratio is about 10 to 15.

Nor is it because Irish ferns have a wider range in Ireland than British ferns have in Britain : the average number of species found in the 40 Irish vice-counties—some 26 or 27—is closely matched by the corresponding British figure. The proportion of ferns in Ireland is due rather to increase in the number of individuals of some of the common species—Male Fern, Broad Buckler Fern, Lady Fern, Bracken, Harts tongue, and so on, due no doubt to greater atmospheric moisture, damper soil, and larger amount of unreclaimed ground. All of the eight well-marked British species absent from Ireland are decidedly rare in Britain ; all of the Irish ferns are found also in the neighbouring island. But there are some marked discrepancies as between the two islands as regards abundance of certain species. Parsley Fern is extremely rare in Ireland and favours the northern regions. Only 20 or 25 clumps are known from the whole island. The Limestone Polypody has only *one* station, far in the west. Oak Fern has been found occasionally, but has not been seen by any living botanist. Against these, the two Filmy Ferns are much more widely spread than in Britain, Killarney Fern has been found in 14 of the 40 vice-counties, Ceterach is everywhere, mostly in the large crenate form which seems unknown in the sister island, Bree's Fern is in almost every county, and the Royal Fern is even more widely spread, forming a notable feature of the vegetation in the south and west.

Ireland consists, generally speaking, of a low plain of limestone filling the centre, with neutral or acid rocks, often rising into mountains, all round the edge. This influences the distribution of the ferns, and would influence it more but for the fact that much of the central plain is covered by peat bog, or peaty soils, allowing of the presence of much Osmunda, Athyrium, and Blechnum, which do not like lime. The limestone in the central plain is mostly covered by limy boulder-clay, but along the western edge the rock often lies bare, forming a paradise for the lime-loving species. Here,

in vertical fissures in the grey rock, Scale Fern grows in profusion, a foot high, and Maidenhair attains two feet. It is on ground of this kind that the Limestone Polypody has its only Irish station, and it is strange that it has not been joined by its frequent English companion on such ground, Lastrea rigida, which has never succeeded in crossing the Irish Sea. Our one maritime fern, the Sea Spleenwort, occurs round the whole coast of Ireland ; along the Atlantic sea-board the influence of sea-spray is seen on its occurrence up to 750 feet in very exposed places ; and it is found by the Lakes of Killarney, nine miles from the nearest sea, and twice that distance from the stormy coasts whence might be derived the salty atmosphere which it usually seeks. In sheltered nooks along the coast its fronds attain a length of two feet. The beautiful Killarney Fern is mercilessly harried by collectors and so-called botanists, but it still survives in fourteen vice-counties, mostly in the west ; Wicklow is the only area in which it is known to have been exterminated. Fortunately, it is now very difficult to find, but it still occurs, mostly as an odd small plant in a secluded nook, from south to north and from west to east. Its allies, the two Filmy Ferns, are much more widely spread, and attain their greatest profusion and luxuriance in the warm wet south-west where, as at Killarney, sheets of one or other species many square yards in area may be seen enveloping great boulders in the woods, forming lovely blue-green drapery. While the ferns which dislike lime, mentioned above, have succeeded in colonizing the whole of the central plain owing to the presence of peaty soils over the limestone or of patches of non-calcareous rocks, a different cause, an effect of human industry, has allowed the lime-loving species to spread into even the most remote parts of the areas occupied by acid rocks, such as Donegal, Mayo and Kerry. This is the presence of mortar-built walls, introduced by the Norman invaders less than a thousand years ago, and soon distributed widely over the country. Owing to the lightness and immense number of spores produced by ferns, the lime-loving sorts such as Scale Fern and Wall Rue have spread to walls everywhere, even on remote islands in the Atlantic. The prevalence of moist conditions coupled with the ubiquity of air-borne spores accounts for the frequent appearance of ferns in unexpected places. Half a dozen species at least, including Bracken, Male Fern, Lady Fern, Hart's tongue, and a couple of Spleenworts, grow wild within the central portions of the city of Dublin, in areas and on damp walls, seizing on spots where a leaky down-pipe or some such thing provide a

precarious supply of water. In the West the vertical edge of stone-built railway platforms may become veritable ferneries, with Hart's tongue, Bladder Fern, Spleenworts, etc., and flat slabs of limestone, holding rain-water in their hollows, may be colonized first by clumps of moss, and as these increase in thickness, by the same or other ferns. In the damp Killarney woods quite a number of different ferns occur as epiphytes, growing on tree-trunks where a skin of moss helps to retain moisture.

THE BIRTH OF THE BRITISH PTERIDOLOGICAL (FERN) SOCIETY

By R. Whiteside.

At the age of 17 or 18 my Father handed over his Garden to me to look after, and I was anxious to have some Ferns in it, and I went to Mr. T. Bolton, Senr., at Warton, and bought, in 1885, several plants, some of which I still have, to-day.

There was A.f.f. Plumosum Stansfieldii, a grand plant ; Scol. vulg. crispum and digitatum ; A.f.f. Plumosum Axminster and Victoriae ; Polypodium vulgare Prestoni, and Polystichum Plumosum Pateyi. This is now nearly extinct. I frequently went over to him, replenishing my stock ; he had a wonderful collection, also his brother Henry, between them they had the finest collection in the North of England. They were both great raisers and finders of some of the best Ferns we have, and for sheer love of growing Ferns and adding new finds and varieties. Both were Master Masons, and Ferns were their hobby.

Living in Lancaster at the time was a Mr. Joseph Stewardson, a great Fern hunter, who found many fine varieties, as mentioned in the book, " Ferns of the Lake District," by W. J. Linton : second edition by J. M. Barnes, a third by G. Whitwell, of Kendal.

This book shows the names of Ferns found, and by whom, and comprises all the recognized varieties in existence to-day. The finders of these Ferns were the original members of Pteridological Society. These two great Fern men, T. Bolton and J. Stewardson, had heard that E. J. Lowe, the great author and raiser of Ferns, was going to show his plants at a Horticultural Show at Preston. They had heard it said that people in the North could not grow Ferns. " Let us

challenge him and let him see we know, and can grow them." They went, and swept the decks in groups, and their reputation was made, and friendship cemented. Mr. Bolton died, and Mr. Stewardson went to America ; on his return, he used to come down to look through my collection, and advise me on the collecting and qualities of each species.

At Warton, Mr. T. Bolton's son took his Father's place, and he was as great a lover and grower as his Father ; and put the Boltons' name on a pedestal as the Fern men of the North, that is, his Uncle Henry and himself.

To these Boltons, Mr. Stewardson and I often went, and it became an annual event to go to Windermere and be introduced to the great Fern men of the Lakes, and go for a Fern hunt as well.

My first introduction was to Mr. John Wilson and his wife, at Millbank Stock, Bowness, a genial old couple living in a quaint and beautiful old-world cottage with woodbine around the door ; a picturesque place often painted, situated on the edge of a Ghyll, and all around the garden were Ferns, here, there and everywhere ; in greenhouse and frames.

Polypodies grew rampantly at the front of the house under an old Yew tree ; and splendid specimens of A.f.f. in variety. His wife was an ardent collector and had found some fine varieties ; at the side of his house Lake Windermere was visible, with its scudding white sails of yachts. He once told me of someone going across into the Elleray Woods and and bringing away a mass of *Hymenophyllum Wilsoni* "Filmy Fern," to use it for a screen in his fireplace. Vandalism !

Then we would go to Mr. J. Garnett, the raiser or finder of the beautiful A.f.f. setigerum. He had a very fine collection.

In Bowness, F. Clowes had rare varieties, especially a few "Royals" in variety.

The fine collection of a Mr. Hartley, who died, was put up for auction. I purchased my first crested "Royal" there, and Mr. J. Wilson bid for the finest A.f.f. I have ever seen.

It had crests like *Lastrea f.m. grandiceps*, J. Wilson got it for 15/- and it was the pride of his garden : at his death, Dr. Stansfield bought it for the Society, at a good price. Years after I had a crown, but lost it.

At Kendal there was a group of Fern men of great renown. J. Wiper (of the famous Everest Mint Rock) had rare specimens and grand plants ; he took a great pride in them. We often called there and considered the various qualities of varieties.

J. Gott, a remarkable grower and very keen. He attended business at the age of 90.

W. Wilson, of Ferry Green, an enthusiast with a great knowledge of plants.

He and G. Whitwell were great friends and were often together.

Mr. G. Whitwell, of Serpentine Cottage; of him, one can hardly say too much. He was the centre where all Ferns of collectors found a home, and his plants were magnificent.

There were varieties from everybody and all " specials " were under his own care. There is no one that has found as many varieties as he of Lastrea montana, plumose, crested, narrow, attenuated.

I never went to Mr. Barnes or Mr. Stabler, both of Levens. Mr. Barnes I never knew ; he found the finest of all Lastreas, *dilatata Barnesii grandiceps*. At his death his best plants were taken to Mr. Whitwell for care.

Later, Mr. J. J. Smithies, a very keen grower and collector, of Manchester, came to live at Kendal and established a very fine collection : he had a grand lot of *Blechnums,* the best I have ever seen, a frame full of nearly every variety.

It was after one of our yearly visits to the Northern Fern-hunters, whilst we were waiting for the train, I said to Mr. Stewardson, " Why don't you Fern men congregate together and lend your collections and ' finds ' ? "

" Nay," he said, " we have tried, but nothing comes of it."

" Will you come, if I write to all the Lake men and ask them to a meeting at Kendal ? "

It would be grand if you would." And so I wrote to these great Fern lovers and convened a meeting at Mr. Joseph Wiper's, Stricklandgate, Kendal, on the 23rd November, 1891. I had drawn up a code of rules, to be put to the meeting, to be amended or accepted.

Those present were Mr. J. A. Wilson (Bowness), Mr. John Garnett (Bowness), Mr. G. Whitwell, Mr. John Gott, Mr. J. Wiper and Mr. W. Wilson (Kendal), Mr. R. Whiteside and J. Stewardson (Lancaster), Mr. T. Bolton and Mr. J. J. Smithies.

I was appointed Secretary pro tem, Mr. J. Wilson was voted to the chair.

The first consideration was a name for the Society and it was decided to call it " The Northern British Pteridological Society."

Dr. F. W. Stansfield (then of Derby) to be President, J. A. Wilson and T. Bolton, Vice-Presidents, Joseph Wiper, Treasurer, and George Whitwell, Secretary.

The annual subscription to be 5/-.

The first Annual Meeting was held at Bowness, with Dr. Stansfield in the chair, and what a meeting it was, with all the greetings of old friends, and of others not met before.

A photograph was taken, published in the first volume of the GAZETTE.

The second meeting was at Lancaster, then at Bowness for a few years ; and after that, meetings in Scotland, Wales, Ireland, Devon and Cornwall. With such a glorious beginning, great men in the Fern world joined in : C. T. Druery, Mr. A. Cowen, Mr. Cranfield, Mr. W. and Mr. I. Phillips (Ireland), Mr. R. Lloyd Praeger, Rev. Kingsmill Moore, T. E. Henwood, W. Forster, Mr. Sheldon, H. Stansfield, and the Bolton families.

ON SPORE SOWING.

BY A MEMBER.

The first essential, of course, is to obtain your spores, or rather, to do so as easily as possible.

They ripen at different times in different species, and, to some extent, at different times in the *same* species according to the season (hot or cold) and geographical situation (north or south) : but when ripe, they are shed over a fairly long period, so begin testing fronds about mid-July and continue at intervals of 10 days or a fortnight, until successful.

Take a frond in dry weather, lay it on a piece of white shelf-paper cut large enough to fold over; put the packet in a dry and slightly warm place under light pressure (two or three books), and leave for a day or so, then examine carefully. It may be found that spore cases have fallen, light chaff-like bodies; but no dust-like spores: so close the packet and put under pressure again for a while longer; a brown or blackish mass of dust is a proof of fallen spores, which when shed are usually super-abundant.

When they have been obtained, close up the packet, write details on it, and put it away in a dry place (I generally leave the frond inside) until sowing time, which is best in February with a long growing period ahead: and when the time comes, the next requirement is a receptacle, referred to hereafter as a pot.

Over 20 years ago, thanks to advice from Dr. F. W. Stansfield, I bought a dozen plain glass butter-dishes, and still remember the shop assistant's astonishment: but seven of these are still in use—for Fern raising: they are now probably unprocurable, but somewhere about the house you may have one or more of the glasses which — long ago — contained tongues; or the smaller paste or potted meat ones; these are good, but need a square of glass large enough to more than cover the opening. Be sure that the pot (and any cover) are thoroughly clean.

A small flower pot—again, well cleaned—and a glass square; and a saucer in which to stand the pot; are today's probable equipment: and in this case, some moss at the bottom of the pot helps to keep the soil moist.

Now for the soil; get the stiffest you can, or at least, on the stiff side, and if fibrous, put it through a small mesh sieve to remove fibre: then sterilize it.

An old, but more or less clean saucepan, half filled with soil which is just covered with distilled or rain water and gently boiled until the surface is no longer so covered, is sufficient; I keep an old tea-spoon handy to take out some soil, which should now be moist but not "treacly" or liquid: if you can pour the stuff back into the saucepan, more boiling to remove surplus water will be necessary.

Then cover the saucepan and let it get cold ; and then half fill the pot but do not smooth down the surface of the soil, it is better left rough ; put on the glass square, set the pot in its saucer, and leave for 24 hours : this will allow time to drain and ensure that the mixture is not too wet.

Before sowing, label the glass square, or preferably, the pot ; and then scrape some spores gently from the packet on to another clean bit of paper, taking care to avoid a draughty place. Hold the paper just above the soil, reverse it carefully, and shake or tap it gently ; this should give a good sowing ; then replace the glass square. The saucer may have a little water kept in it, and the outfit should be placed in good light but not in direct sunshine ; a north window, or a frame facing north, is best. Spores of some species germinate quickly, others take a considerable time ; success is known when a green tinge appears on the soil, it will almost certainly be Fern, not moss, though this does sometimes appear in spite of sterilizing.

If the soil becomes dry, pour a very small amount of *distilled* water on it, gently : the corks with tubes used in lighter fuel bottles will be found useful for this. After a time, a greenness on the soil shows that the sowing has probably succeeded. I say "probably," because the green growth *may* be moss. Definite success is known presently by the appearance of prothalli, flattish scale-like bodies not unlike the Liverwort which sometimes gets into greenhouse flower pots, or into sunless damp corners of the garden. When the first frond, or two, is seen, the prothalli with frond can be picked out : it is important to preserve the prothallus when doing this rather finicky operation. Dr. F. W. Stansfield advised not using sterilized soil for this, but the cleanest available. I use sterilized granular peat (bought "ready made") mixed with a very small amount of well sieved good loam, and a big helping of coarse sand.

When the pricking off, into as small pots as possible, is done, a glass cover is placed on the pot and the soil kept just moist. The cover should be wiped dry daily. It may now reasonably be hoped that growth will proceed normally and that eventually the reward of a fine fern will be your return for the care bestowed.

One word of warning : don't be disturbed because the young fronds are unlike the parent : they will develop proper characteristics in time.

What has been said here applies to fertile varieties just as much as to species.

Crosses between ferns of the same species (i.e., two varieties of Polystichum or two of Lastrea, and so on), can be made by mixing the spores.

Our late member M. Kestner used to prick off prothalli of two different ferns, in close contact, leaving cross-fertilization to chance. I do not know how well this method worked.

NOTES ON FERNS, 1939-1948.

By E. A. Elliot.

Since 1939 it is probable that notes have been made by many fern growers of events of interest among their plants ; here are a few items that have occurred to me personally.

Undoubtedly the most interesting to others as well as to myself, was the appearance of a sporeling Fern in a pot of *Davallia* bought in Reading. During one of the hard winters the *Davallia* was lost, but the tiny newcomer had become large enough to remove and pot up separately: it grew steadily and at last turned out to be an obvious *Asplenium*. It was, however, not until after the war that a frond was sent to Mr. P. Greenfield, who at once identified it as *A. Foresiense*. Meantime, another sporeling also from the *Davallia* pot had come up and been given careful treatment, eventually becoming the Limestone Polypody, *Dryopteris Robertiana*: (Polypodium Robertianum): an identification confirmed by Mr. Greenfield. The Asplenium is alive, but not in as good state as it was, and spore-sowing from it has not yet been fully successful ; but I hope to preserve it. The Polypody is expanding vigorously, and got a re-potting in early spring.

There can only be one explanation of the appearance of these two Ferns, one a French species found on or amongst rocks on mountains, the other a local inhabitant of English limestone ; they are relics of Dr. F. W. Stansfield's plants. He used to lodge Ferns at the Nursery from which the *Davallia* came, and his garden was next door to it: and stray spores did the rest, resulting in the unexpected pleasure afforded me.

In the winter of 1944, while turning out a cabinet, a packet of *Asplenium adiantum-nigrum* spores was found, labelled as collected in South Devon in 1936. These were sown in February, 1945, nine years old, and have yielded a number of plants, now spore-bearing themselves.

Oxfordshire as a whole is not a good county for ferns, and it was a special surprise to discover a colony of Scale Fern, *Ceterach officinarum,* on both sides of a wall near Goring: it has so far not been possible to discover how it got there. A spore-sowing from a frond has produced a crop of what—in immature state—looks like *Scolopendrium*: a solitary specimen of which (Hart's tongue) was found on outside steps to my cellar early in 1948, potted, and is now quite a sturdy plant. This may have originated from an old specimen elsewhere in my garden: but if so, the spore had a curious journey, out of a thicket, across a lawn, over a high wall and down the cellar steps: where its existence was precarious, as the roots when gently dislodged were spread out amongst moss on brickwork—too small and weak to penetrate crevices.

Several ferns which had been in open ground, in shade, for many years here in the Thames Valley, were taken up, potted, and sunk in loose soil, early in 1948 ; good loam and sterilized peat being used in potting ; the result has been excellent, one or two having doubled in size in a year, after remaining the same size as when first planted some 12 years ago.

This " sunk pot " plan is accordingly suggested where the local soil is unsuited to good Fern growth.

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THE BRITISH PTERIDOLOGICAL SOCIETY

THE SOCIETY originated, in September 1891, in the Lake District with headquarters at Kendal. Its members are distributed throughout Great Britain and Ireland, with some in the Dominions and U.S.A. Its objects are :—

(i) The Study of Species and Varieties of British Ferns ; and

(ii) The Recording of Information with regard to Ferns generally.

The organ of the Society is *The British Fern Gazette* published usually twice a year.

The Society is affiliated to the Royal Horticultural Society.

The Annual Meeting is held when possible at some place where ferns are abundant and from which excursions for fern hunting can conveniently be arranged. These excursions are an important feature of the Society's activity.

Fern Fronds can be exhibited by members and to any new fern reaching a high standard the Society will award a Certificate.

Members are invited to communicate with the Hon. Secretary on subjects of interest with regard to British Ferns. Fronds may be sent to him to be identified or named at any time.

A collection of British Ferns is being formed with the help of the Society in the Royal Horticultural Society's Gardens at Wisley.

The Committee is endeavouring to increase the membership of the Society and,, through this and by other means, to encourage the more general cultivation of the varieties of British Ferns. Any lover of horticulture is eligible for membership and the subscription is 10s. per annum (due in advance at or immediately after the Annual Meeting) which entitles members to copies of *The Gazette* and to any help the Officers of the Society may be able to give.

The Hon. Treasurer or Hon. Secretary will be pleased to supply members who may desire it with Bankers' Orders for the convenient payment of subscriptions.

Further particulars may be obtained from the Hon. Secretary,

J. R. PULHAM, Hon. A.I.L.A.,
71, Newman Street,
London, W.1.
Telephones : Museum 0515 ; Edgware 4028.

THE ROYAL HORTICULTURAL SOCIETY

FOR nearly 150 years The Royal Horticultural Society has been the leading Society in British Horticulture, and is now the largest in the world. For an annual subscription of two guineas a Fellow is kept in touch with all its operations, has the right to attend all its shows, to visit its gardens at Wisley, and to obtain advice on horticultural matters. Larger subscriptions carry increased privileges. All persons who are interested in horticulture are eligible for membership, and full particulars may be obtained on application to:

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EDITED BY

Revd. E. A. ELLIOT, M.A.

South Stoke Vicarage,
Near Reading, Berks.

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THE BRITISH PTERIDOLOGICAL SOCIETY

President: A. H. G. Alston, B.A., F.L.S., Dept. of Botany, British Museum (Nat. Hist.), Cromwell Road, London, S.W.7.

Hon. Secretary: J. R. Pulham, Hon. A.I.L.A., 71, Newman Street, London, W.1

Hon. Treasurer: J. W. Dyce, "Hilltop," 46 Sedley Rise, Loughton, Essex.



Lomaria Wercklei

THE
BRITISH FERN GAZETTE
NEW SERIES.

VOL. VII. DECEMBER, 1949. No. 10.

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EDITORIAL.

It is not usual to pay any marked attention to a fortieth anniversary, but it cannot go unnoticed that it is forty years since the GAZETTE was first published, in September, 1909. It has attained a very respectable age, therefore, and we believe it is one of the senior specialist Journals.

This statement will, we hope, show that it is not breaking with the past to include, and to call special attention to, an article by a member in this issue, on tropical ferns. Wherever they grow, ferns are our interest ; and we think others will be glad to share something of that knowledge of these species, which, we feel, is much greater in Mr. Lankester's case than he admits.

There is still a great deal to be learnt about quite common species, and notes on these, as well as on the less common, will be very welcome ; from a botanical as well as from a horticultural angle.

It is eleven years since there was an account, from our special point of view, of the Southport Show, and we are

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particularly glad to include a report of this event again. With equal pleasure we note that Mr. J. Brookfield, winner of our Society's Cup in 1938, has repeated his success this year.

Captain A. Dunston suggests that a list of publications on ferns should be got together and be put on record in the GAZETTE. The Editor will be glad to have notes from members on this subject, giving the Title, Author's name, Date, Publisher, and where published; whether illustrated (coloured or plain) and by whom; and whether the work is a book or is included in some other publication.

A Member would like to acquire good forms of *Blechnum*, also *Asplenium trichomanes incisum*, *Polypodium grandiceps* Parker, *Lastrea pseudo-mas ramosissima* Moore (found by Robert Wright), *Polystichum angulare divisilobum plumosum deltoideum*, and *P. angulare elegantissimum*.

Anyone who has plants of these for disposal will perhaps kindly communicate with the Hon. Secretary, stating prices if it is desired to make a charge; or an exchange of plants might be arranged.

We have been asked by our Member, Mr. R. Kaye, to say that he has for sale the eight volumes of Lowe's "British and Exotic Ferns," at £3 the set, including postage. Intending purchasers should write direct to Mr. Kaye.

Members will be sorry to know that our Secretary has had a bad illness followed by a serious operation, and we shall all wish for him a complete recovery and return to his usual energy and enthusiasm in all horticultural affairs, and in his other activities in which he takes so much interest.

Mr. P. Greenfield, his predecessor, has most kindly attended to our Secretarial affairs during Mr. Pulham's illness, and we must all be grateful to him for this invaluable help.

BACK NUMBERS OF THE "GAZETTE." The Society has for disposal some numbers of Vols. I, II, III and IV, all of Vols. VI and VII (so far issued), but none of Vol. V. These are offered to members at 6d. per copy for not less than six issues, post free. The "Gazette" contains information on ferns, especially on the finest varieties of recent years, which is not to be found in any other publication.

A report in full on the Southport Show, which Mr. Pulham had intended to write, has had to be abandoned owing to his illness: a short account has, however, been contributed, and it is hoped to include a photograph of prize-winning ferns in a later issue.

THE SOCIETY'S TITLE AND ITS ORIGIN.

(Contributed.)

The Northern British Pteridological Society, as stated in the interesting article by our Vice-President, Mr. R. Whiteside, in the last issue, was founded in 1891. So quickly, however, did the founders recruit members from prominent fern enthusiasms in other parts of the British Isles, that it was decided in 1892 to change the title to "The British Pteridological Society." But this was not the first use of the name.

The search for varieties of British ferns began about the middle of the 19th century, and G. B. Wollaston may be said to have started the record of good finds when he discovered the fern then named Polystichum angulare proliferum Wollastoni, in 1852. Wollaston was a man of scientific outlook and it was he who first recognised three types of Lastrea filix-mas, and classified them as Filix-mas, Pseudo-mas, and Propinqua.

Probably he and Col. Jones were the prime movers in the formation of a coterie of fern enthusiasts who called themselves the British Pteridological Society.

The first "Occasional Paper" of the Society which appeared in print is dated 1875. The list of Officers of the Society in that year contains, among others, these well-known names:—Dr. Allchin, Thomas Moore, G. B. Wollaston, Col. Jones, Dr. Fox, E. J. Lowe, J. E. Mapplebeck, J. Moly, R. A. Thompson and J. S. Wills.

How long the Society remained in being is not exactly known, but it was probably defunct when the Northern B.P.S. was founded, as Wollaston promptly joined the Northern Society. He was made a Vice-President and took great interest in its doings.

More information about the original Society would without doubt be very interesting, if it were available.

(This may prove to be the case.—EDITOR.)

OUR FRONTISPIECE.

Mr. Lankester refers in his article, with evident admiration, to Lomaria Wercklei, shown in the plate. Its distant

British relative Blechnum spicant hardly suggests kinship in its low-growing habit, but represents all the same in a humble way a grand race which unfortunately we cannot claim as natives.

FERNS IN COSTA RICA.

By C. H. Lankester.

The suggestion for some notes on the fern flora of Costa Rica reaches me cut off from the source of inspiration, and with only a very fragmentary or rough working knowledge of them ; my remarks must be limited to an appreciation of their abundance and beauty in the vast floral wealth of that tiny country, so immensely varied ecologically. Helped as it is by its orographic and geographic status, ferns, by the extreme facility of their aerial distribution are not limited as are many other groups, though they may be restricted by lack of favourable wind currents or cut off from certain regions only by constant wind.

The forest fern content usually depends on the maintenance of its virgin state, but where roads are cut through and the talus is not too steep, these at favourable elevations become veritable gardens of ferns, and in such situations wonderful displays of *Gleichenias* are sometimes formed: two roads cut during the past eight years have opened up two superb fern districts, one the Cinchona experimental station at the headwaters of the Sarapiquí river, a region of immense botanical wealth at elevations of 4,000 to 6,000 feet running northwards to the Nicaraguan frontier, with the heaviest rainfall of the country, of about 200 ins. annually: and the other the great tract of forest bisected by the Pan American Highway, which, leaving Cartago at 4,800 feet, rises to 11,300 in the Cerro de la Muerte and drops to the Pacific coastal plain and its present terminus at San Isidro somewhere near 2,000 feet. This gives a wonderful series of fern zones, not only of elevation, but also of pluviometric range ; and here, there is no doubt, a large number of species, possibly new, and certainly new to the known flora, will be found. Unfortunately the attempt by the Government to avoid despoliation of this route was ineffective, and thousands of the glorious oak trees by the side of this have been felled and made into charcoal and barrel staves, the secondary growth being mainly *Chusquea, Rubus,* and *Phytolacca,* though of course examination brings a wealth of other species to light.

Then higher up to 9,000 feet the interesting formation known in South America as "paramo" begins, and there are several miles of this, now only too likely to be modified, or destroyed by cattle; here however the Government has been approached by the President of the Garden Club on its behalf, to set aside a small and as yet not too badly spoiled area (6 Hectares) of a specially fine complex of the swamp type of paramo, whose two most striking plants are *Lomaria Wercklei* and *Puja dasylirioides,* the latter the most septentrional representative of that prototypic Bromeliad genus.

The majority of visitors who see the *Lomaria* always judge it to be a *Cycad*; last year a smallish group of this species reached Kew successfully and is growing well.

Up on the paramo nearer the summit several interesting ferns occur, terrestrial *Trichomanes* and the famous *Jamesonia,* so long such a difficult plant to see or collect. Of course in the oak forest at 6,000 feet and above, or higher amongst the *Magnolias, Podocarpus* and *Escallonias,* many beautiful tree ferns are to be seen: on the upper scarps of the Estrella valley, which the Highway crosses on a connecting saddle, the rare and very lovely *Gleichenia retroflexa* occurs, with a wealth of other genera too numerous to mention here. It was my good fortune about 25 years ago to take William Maxon up there, and it was a job to persuade him to leave, late in the evening: the view from el Alto de La Estrella embracing the volcanoes of Turrialba to the East, Irazu in front and Poas on the west, he thought the loveliest panorama he had seen—and his experience of the North American continent must have been wide.

On either coast are found the finest *Adiantums,* though many lovely ones occur even in the central districts; perhaps the finest aggregation of coastal species occurs on Cocos Island, a veritable fern Paradise of incredible richness, with an outstanding *Trichomanes* as richly adorned as a peacock's tail.

The little rivers and creeks are as though planted out by a landscape artist. Here also the daintiest of all ferns, *Trichomanes capillaceum,* is as abundant as it is at 3,000-5,000 feet; it appears definitely symbiotic with *Cyathaceae* and grows epiphytically on the trunks.

It has not yet been my fortune to see the almost mythical species *Loxomopsis costaricensis* that Werckle found and no one else has done since; yet it may be abundant in some restricted locality. Another rare species of great interest is

the symbiotic myrmecophilous species *Polypodium Brunei* which grows on the Pithecolobiums of the Pejevalle River. Each rhizome between the fronds has enclosed cells inhabited by ants.

This region is now much opened up by cultivation, and the subsequent despoliation always lowers the fern content of any such district. At this elevation, 2,500 feet, there are many fine genera, and some of the *Marattiaceae* occur, especially *Danaea* ; one of the large *Pterids* is used locally as a vegetable, the tightly rolled young fronds being cooked as a substitute for asparagus. One of the most notable of the local varieties is a species of *Leptochilus,* on steep, heavily shaded, forest slopes.

Next year Dr. Louis O. Williams, of Harvard, plans to come with Paul Standley and a group of the rising generation of local collectors to work the Tolamanca cordillera and its valleys south of Limon: this will add much-needed knowledge and we may hope Dr. Standley will give us a Fern Flora of Costa Rica to complete his valuable work on the Phanerogams.

Every fern lover who can, should make a trip to the tropics ; most of the West Indian Islands have fern paradises on the upper slopes of their mountains. Of tree ferns, La Martinique proffers an incredible display, possibly millions rather than thousands mat the mountain slopes: as stated above, the little volcanic isle of Cocos is a veritable cache of fern gems, though rather a recondite and difficult spot to reach. Costa Rica itself can be recommended, reachable now by air in 3 days or less, with access more or less easy by 'bus or car to the volcanoes and numerous good fern localities. On the roads that have been mentioned, a large collection can be made in a short time, and much delightful scenery enjoyed, with fascinating glimpses of bird and insect life.

FERN HUNTING.

The gentle art of hunting for varieties of British ferns was described in broad outlines in the late President's article on pages 128 to 131 of the GAZETTE of July 1938. The present paper is concerned with detail, much of it uninteresting in itself, and is written with the object of assisting members who are unable to attend an annual excursion organized by the Society. That, as the article referred to suggests, is the quickest, easiest and pleasantest method of learning the way

to go to work ; but very little co-operative hunting may be possible until transport and other difficulties become less formidable. In the meantime it is hoped that these notes may be helpful to a member whose holiday may take him to a district, for instance the south-western counties, where ferns abound and he naturally wishes to take the opportunity to look for varieties.

The article of July, 1938, touches on the various habitats of ferns. Here it is proposed to deal almost exclusively with hunting along hedgerows and the banks of deep lanes where the most important quarry is *Polystichum angulare*. Anyone who has mastered the hunting of *angulare* is not likely to fail with other species.

For such hunting perfectly clear vision at a distance of about 5ft. or 6ft. is essential, suitable spectacles for that distance being obtained if necessary. Distance vision in itself is not sufficient: the eye must be trained, even the eye of a gardener. It is necessary to be able to detect the slightest abnormality in the shape of a pinnule.

The weapon or weapons to be carried will have to be something of a compromise, as anything from a penknife to a crowbar might be useful. The specially made walking-stick implement depicted in the late President's article is a particularly efficient tool when it is desired to tear away vegetation from a fern deeply buried in a hedge. The President himself was somewhat lame and had to carry a walking-stick in any case. Not everyone will want to do so. Further the weapon would have been dangerous if its cutting edge had been sharp enough to cut away roots, etc., immediately round a fern, and for this purpose a strong sharp pocket knife is to be preferred. If the knife includes a spike, it will be useful as well for coaxing a small fern out of a wall. In addition a trowel must be carried, but no ordinary garden trowel of whatever quality will be strong enough to withstand the leverage which will sometimes have to be put upon it. Opinions differ, but the writer has found a type of trowel which was sold as a fern-trowel to be satisfactory. It is of stout steel, narrow and hollowed throughout its length like a gouge. There is a slight bend to form a handle, the hollow being here filled with wood to give a comfortable hold. The edges are bevelled to a fine, though of course not a very sharp, edge. To push aside vegetation hiding a fern in a hedge or ditch a stick is sometimes useful. This can usually be obtained on the spot. A vasculum may advantageously be carried. The usual stock size is hardly large enough: one about 16 inches long by $3\frac{1}{2}$ inches

deep or larger is preferable. It will take a fair-sized fern if the fronds are carefully bent round. And here it should perhaps be observed that damage to fronds must be carefully avoided. If it is necessary to remove ferns from the vasculum for temporary storage they should be put into a large tin or wrapped completely in paper so that the fronds are not exposed to dry air. If a vasculum is not carried, some paper and string should be taken. Large ferns will in any case have to be wrapped in paper. Moss can with advantage be placed round the roots. The paper should extend to the tips of the fronds.

The hunter is now ready to proceed along his ferny lane. If it is rich in numbers and species, he may have *Polypodium vulgare* along the top, and below it *Polystichum angulare, Lastrea filix-mas, Asplenium adiantum nigrum,* and, if he is within a dozen miles or so of the sea, probably a large number of *Scolopendriums*. In addition to these species he may have *Athyrium filix-fœmina* and *Lastrea dilatata* if the soil is limeless or nearly so: if on the other hand it is positively calcareous he may come on an occasional plant of *Asplenium trichomanes* often with longer fronds than it produces when growing in mortared walls, where it is most frequently seen. If the ferns are continuous along the lane the speed with which an expert might hunt one side of the lane might be as fast as half a mile in an hour, longer if the ferns cannot be well seen, perhaps because other vegetation partially covers them or because fronds of the higher ferns have to be bent down so that the frond may be examined. With an untrained eye this would be hopelessly fast. The more slowly one begins the better: and it would probably be well to concentrate on one species and to ignore the others. The one species in this case should be *Polystichum angulare*. The eye will soon become accustomed to the appearance of the normal form but this varies in colour according to the age of the frond and whether it is in sun or shade or in damp or dry soil. Each plant must be carefully scrutinized, in comparison with a neighbouring one if necessary; and not the slightest abnormality in the shape of the pinnule should be ignored without consideration. The more slowly and thoroughly this tedious duty is performed the sooner will one become an efficient hunter. Now, although the finding of a really good variety may not reward the hunter for years it may not be more than a matter of minutes before he detects some slight abnormalities in *angulare* pinnules, and to avoid disappointment it may be as well to warn him that some of these changes are transitory and do not represent great prizes. He may notice a slight change of shape which

may be caused simply by the turning down of the edge of the pinnule as a result of heavy sporing. Or he may see a congested frond. Such fronds often grow out of a partly decayed crown or one which has been slashed by the hedge-trimmer. This abnormality is temporary. A permanently congested plant is usually well worth collecting as an example of *P. angulare congestum*. Except these temporary changes, *angulare* seldom shows any abnormality if it is growing in non-calcareous soil, a condition which may be indicated by other types of vegetation or the presence of such ferns as *Athyrium, Lastrea dilatata* or *Blechnum*. It is generally accepted among fern hunters that a trace of lime in the soil produces in *angulare* a tendency to sport. In such conditions one or two minor variations may soon be noticed. For instance the pinnule may show a tendency to divide as if it were trying to turn itself into a pinna. This type of variation shows itself more particularly in large plants. If it goes far enough the fern becomes tripinnate—a recognized and handsome variety. Another general type of variation which relatively is not very rare is that of the acutilobes. The pinnules are reduced in size and their lobes are acute, as the name indicates. The reduction in the area of the pinnules seems to be compensated by increased stoutness of the rachis, which, covered with brown scales, is usually very conspicuous. Any acutilobe is worth collecting. The finer ones are valuable additions to a collection. If one has few ferns—and it may be some time yet before stocks of good varieties can be raised to replace losses during the war—any fern which seems even slightly abnormal, except the falsities which have been described, should be collected and its development watched under cultivation for the sake of experience. It can be discarded later if not wanted, or planted in the wild garden.

Although concentrating on *angulare,* the hunter may catch sight of one or two conspicuous abnormalities in other ferns with which he need not waste his time. A *Scolopendrium* often produces a frond which has a bifid tip There is no point in collecting it. If the tips of all the fronds are multifid that is another matter. And *Lastrea filix-mas* has an annoying habit of producing rogue fronds of very irregular character. This, too, is not likely to be worth collecting.

Further notes on some of the species here mentioned and of species growing in other parts of the country must be deferred for lack of space.

Meantime, if anyone puts in some hours of hunting as a result of reading this paper and finds nothing of interest, let him not abuse the writer. It is a common experience. But what does it matter ? A day in the country is always worth while.

P. Greenfield.

WILD FINDS

As a result of the extraordinary difficulties arising out of the war, very little fern-hunting has been possible for several years and there is perhaps a danger that the need for it may be forgotten. It was not without reason that excursions for hunting ferns in a suitable district were always arranged in connexion with annual meetings. The wild find introduces new blood into the general collection of varieties, and when sown, it may originate a new line of variation, just as a *P. angulare decompositum* gave rise to the much-admired plumose-divisilobes.

Chiefly, no doubt, for this reason, and not because of the time and trouble involved in hunting, it has been the practice, in the adjudication of fronds at annual meetings, to treat a wild find as of somewhat higher value than a raised plant, and to give it preference for an award.

It seemed, therefore, to the writer a matter of duty, when an opportunity for a week's holiday in October presented itself, to proceed to the Dorset-Devon border to map out a possible scheme for a society excursion, and at the same time to put in some hunting. The reward was scanty, but had better be put on record. A long search among Polypodies brought to light a bifid form which, after trial, seems destined to be thrown away.

Another day produced a weird *angulare* making new growth after being slashed by the hedge-cutter, and apparently trying to become a grandidens. This was collected, but it is no surprise that it has reverted to normal.

A third find was a *P. angulare acutilobum,* which is somewhat remarkable for the length and narrowness of its fronds, but is otherwise undistinguished. Perhaps the acutilobe should be described as a gift rather than a find. It was growing inside a wood not suitable for serious attention, and would probably have been passed unnoticed but for a glint of sunshine on the brown soil beneath the fern. On this light

background the fine cutting of the fronds showed up prominently.

Nothing more of note was found in 1948, but in June, 1949, another variety was found almost as unexpectedly as the Devon acutilobe. In the course of a flower-hunting ramble in West Kent, the path led through a rather dense wood, and although this was on top of the Downs and the weather had been dry for weeks, there was a shallow depression in the wood where the soil was loamy and very damp. A few *Lastreas, filix-mas* and *dilatata,* were observed, and past experience suggested that an examination of them would be waste of time. But on a hot, dry day, flourishing ferns are good to look at, and it is wise never to leave a stone unturned, so a move was made towards them, and at once a crested *filix-mas* was spotted, almost hidden by a frond of a normal plant growing with it (so close that it was necessary to take up both plants for careful separation later). This sport is thoroughly polydactylous. The inner pinnules are much reduced and it cannot at present be foreseen whether the fern will have to be termed depauperate, as is so often the case with extreme forms of *L. filix-mas*.

P. Greenfield.

GROWING FERNS WITHOUT GLASS

By P. Greenfield

Apparently some members of the Society feel that they might do better with their ferns if they could grow them under glass. It is true that growers of ferns in quantity, especially if they exhibit at summer shows, do use glass; they are practically obliged to do so, for some species would not be sufficiently developed at the required date without being forced, and in a smoky or dusty atmosphere none would be presentable if grown outdoors.

But cultivation under glass requires special skill and unremitting watchfulness. On the other hand, with a few exceptions which need not be taken into account here, British hardy ferns can, where conditions admit, be grown more easily in the open ground. Many varieties, in fact, are better suited by outdoor cultivation: even the plumose-divisilobes do better outdoors than under glass. All ferns are the better for a maximum period of rest; and outdoors their foliage will attain its natural toughness.

In view of its exceptional period of growth, the Polypody is a special case. Normally, it makes no growth until July. It does not, therefore, reach full development until the autumn ; and it should be green throughout the winter, and for this reason must be protected from damage by the weather.

Probably these ferns are often grown in frames. They were so grown by Dr. F. W. Stansfield, but the frames were not used as a greenhouse. Placed in partial shade from fruit trees, they were given a northern exposure, and whenever possible, the lights were kept upright: always, of course, if gentle rain were falling and the ferns needed moisture. The lights would be lowered if there were a heavy storm, or drying wind, or very inclement weather in winter likely to cause damage.

The Doctor was insistent that sappy growth must be avoided and tough dark green foliage aimed at. Such treatment not only preserved the constitution of the ferns, but resulted in the greatest possible development.

It may be urged that T. S. Henwood, whose cultivation of Polypodies was never excelled, grew them in a greenhouse. They could not have been grown otherwise, under his methods. The top soil was pure leaf mould. Careful and frequent watering was necessary, and constant war had to be waged on pests, e.g., wood-lice. In these conditions it was an advantage to have the ferns in a bed nearly waist high. Dr. Stansfield, who regarded Henwood as a "prince of cultivators," nevertheless once remarked that the top soil was hardly substantial enough, and it certainly would not have been under any less elaborate system of cultivation. In these days Henwood's methods are more likely to be admired than to be followed.

The writer, who is so placed as to be unable to grow ferns at all without encountering formidable difficulties and is obliged occasionally to leave them to take care of themselves, has not cultivated Polypodies for some years, but, bearing Dr. Stansfield's principles in mind, is now engaged on an experiment which bids fair to have some measure of success as a make-shift.

Under the shade of tall thin hawthorns, bare up to about ten feet, a low unmortared brick wall surrounds a space about the size of a large frame. The ferns here planted are covered with small-mesh wire-netting. The netting keeps out birds, and in the autumn catches the falling leaves, which are shaken off automatically by wind, or, if not, must be removed. The

shading disappears in winter when the trees become bare, and the netting should prevent damage from snow.

It may prove necessary during the winter to cover the netting at times to prevent the soil from becoming unduly wet, although sharp drainage may suffice in this respect.

If outdoor ferns are to flourish they must be afforded shelter from wind, the right sort of soil of the highest quality, and the right amount of shade. Warnings have been given against shading too much, but heavy shading for outdoor ferns is probably advantageous, more particularly where the atmosphere is dry, as tending in maintain fronds in good condition and to keep down pests. Watering is not so tricky a business as it is under glass. Hard water must not be given to certain species, e.g., *Blechnum* and *Lastrea montana*. A point sometimes overlooked is that ferns require moisture in their resting season, as well as during the period of growth. If ferns grown outdoors in pots are covered for protection from frost and the material used keeps off moisture, water must be given as may be necessary.

No system of manuring will make up for lack of proper soil, and it is only for certain species and with great discretion that manure can with any advantage be used at all. Very useful articles on this subject will be found in Vol. VI, No. 6, by Dr. Stansfield, and Vol. VII, No. 4, by Mr. Macself.

The *aspleniums* and *Cystopteris*, when grown outdoors, are best planted in a rockery. Watering in some cases may occasionally be necessary. Methods must of course be varied according to the considerable differences in atmospheric conditions in north and west, south and east, but it is hoped that the general hints here given may be found useful by anyone who is not satisfied with the results he is now achieving.

(As a supplement to Mr. Greenfield's article, one by *Dr. Stansfield* from Vol. 5, No. 2, is here reprinted.—EDITOR.)

THE CULTURE OF POLYPODIES.

A correspondent has asked me to describe my method of culture of the varieties of *Polypodium vulgare*, as he says "there is no doubt about the success of the Reading method." Now, there is nothing original about the "Reading method," and no claim is made for anything new in connection therewith. Others have doubtless used the same methods with

equal results, but it is clear that not everyone is successful in their culture, so it may be worth while to describe the chief points to be observed in order to ensure success. The common *Polypody* is the most accommodating of ferns and one of the most difficult to kill by neglect. It is found growing upon the tops and sides of walls, the trunks of trees, the summits of pollards, upon dry banks and in accumulations of leaf-mould. It is, however, not found, and will not grow, in swampy places and the most certain method of killing a cultivated *Polypody* is to drown it. I put, therefore, as the first essential to its cultivation—*good drainage;* the soil may be moist, but it must not be wet for any long period. No fear need be entertained of giving a good drenching occasionally, but the water must be able to get away quickly. It is even advantageous for the soil, during the period of rest, to be rather dry, although not dust dry. The period of most complete rest for *Polypodies,* apart from periods of severe frost, is probably the months of May and June. Growth does not begin as a rule until the end of June and it continues up to the middle of October or even later if the autumn be mild. The ferns are at their best during the autumn and winter months, *i.e.,* from September to March. This brings us to another essential point in their culture, viz., *shelter.* The species will live in the most exposed places, but will not grow to any size without shelter from wind and sun. If this be true of the normal form how much more so is it true of the noble leafy varieties such as the *Cambricums, pulcherrimum, omnilacerum* and the *semi-lacerums?* They cannot thrive if their great luxuriant fronds be broken by wind, snow and hail or by their being used as bedding by dogs, rats, cats, rabbits and birds. Unless the district be unusually favourable and the locality naturally sheltered, therefore, some kind of house or frame is necessary to protect the fronds during the winter. In the Oxford Botanic Gardens *Polypodies* are grown in beds without any artificial covering, but they are well sheltered from winds by walls and hedges. They do remarkably well, but do not grow to anything like the proportions they can attain under glass. While giving shelter, however, it is necessary to avoid anything like close culture. If grown in a confined atmosphere the fronds will grow to a large size, but will be soft and pulpy, and will quickly decay. For this reason I prefer a frame with movable lights to a house, as in the former structure the lights can be either entirely removed in favourable weather or (preferably) they can be secured in a perpendicular position so as to admit air and rain. In my own case the lights are never entirely closed except in severe frost or violent storms, and during the summer and

autumn months they are widely opened on the north side so as to give a certain amount of shade, but to admit a free circulation of air. The fronds produced under these conditions are thick and leathery and those of one year remain green until those of the next year are well developed. This persistence of the old fronds is sometimes rather a nuisance as the new ones have not proper room to develop. A period of comparative dryness before the new fronds appear seems to ripen the old ones and to facilitate their separation from the rhizomes.

Next as to soil. As before stated, the *Polypody* will live in almost any soil which is not too wet, and sometimes appears to grow without any soil, properly so-called, at all. It grows on bare walls and on the trunks of trees, rooting either in the mortar of the walls or in the moss which, in moist districts, covers the bark of many trees. In these situations, however, it is invariably stunted and I have never seen it luxuriating unless it had a run of leaf-mould or peat for its roots. My friend, Mr. Henwood, who grows *Polypodies,* as he has done many other things, as well as anyone ever did, has described his method of culture, especially with regard to soil, at p. 224, Vol. II, of *The Gazette*. For the benefit of new members I may say that the soil consists of about equal parts of turfy loam, fibrous peat, and oak leaf-mould with a slight sprinkling of bone meal. All these ingredients, however, are the *best of their kind* that can be procured at any price or with any trouble. The beds are top-dressed annually with a liberal quantity of leaf-mould and a slight sprinkling of bone meal. The fronds are kept free from green and white fly by being regularly sprayed with "Abol" as soon as these pests begin to appear. Lastly, with regard to lime. Is the *Polypody* a lime lover or a lime hater? It is certainly not the latter because it will grow in old mortar alone. On the other hand, it does not seem to require a large proportion of lime in the soil since there cannot be any large quantity of this mineral in beds of pure leaf-mould or in the moss on the trunks of trees. It is a fact, however, that it is rarely found luxuriating in a wild state except upon a calcareous soil and we may assume that it likes a calcareous flavour in its food. No doubt the leaf-mould contains an appreciable quantity of calcium salts, especially in a chalk or limestone district, and this may be sufficient for its requirements. A little chalk or lime rubble added to the soil, however, can do no harm and helps to keep the soil porous. The bone meal also supplies lime in a comparatively easily soluble form. Finally, the best *Polypodies* are worth any reasonable trouble to do them well and

it has been well said that anything which is worth doing at all is worth doing well. Treat *Polypodies* well and the reward will be abundant.

F.W.S.

BOOKS ABOUT FERNS.

Although the Editor will welcome correspondence, it will save unnecessary postage at least if the names of Fern books already known to him are stated, on which no further information is needed. They are as follows:—

T. Moore. *Nature Printed Ferns,* Folio and Octavo editions. *British Ferns and their Allies.*

E. J. Lowe. *Our Native Ferns. British Ferns,* 1908 and reprint.

Sowerby & Johnson. *Ferns of Great Britain.*

A. Pratt. *Ferns of Great Britain.*

C. Druery. *British Ferns and Varieties.* Book of British ferns.

E. Newman. *History of British Ferns.* 1840.

G. W. Francis. *Analysis of British Ferns and Allies.* 5 Editions.

F. G. Heath. *The Fern World.*

G. W. Johnson. *British Ferns.*

M. C. Cooke. *A Fern Book for Everybody.*

Mrs. Lankester. *British Ferns.*

E. Step. *Wayside and Woodland Ferns.* 2 Editions.

H. A. Hyde & A. E. Wade. *Welsh Ferns.* 2 Editions. An invaluable book which everyone interested in ferns should possess.

G. Schneider. *Choice Ferns for Amateurs.*

S. Hibberd. *The Fern Garden.*

A. Hemsley. *Book of Fern Culture.*

J. Birkenhead. *Ferns and Fern Culture.* Revised by F. Parsons.

The Ferns of Derbyshire. Prefaced by Revd. Gerard Smith.

E. YOUNG. *Ferns of Wales.*

Z. J. EDWARDS. *Ferns of the Axe.*

C. CHANTER. *Ferny Combes.*

J. BRITTEN. *European Ferns.*

BENTHAM & HOOKER. *British Flora* and 2 Volumes of Illustrations.

G. C. DRUCE. Editor, *Hayward's Pocket Book.*

C. A. JOHNS. *A Week at the Lizard.* Many ferns mentioned.

C. T. DRUERY had articles in *Century Book of Gardening* and in *Gardening for Beginners,* by E. T. Cooke.

SOME RARE FERNS.

By R. Whiteside.

On my rambles and visits to my northern fern friends I have seen some very fine and rare ferns that keen growers had in their collections, now dispersed and probably lost.

On one ramble in northern vales I came across, in a secluded mountain stream, a very fine specimen of *Osmunda regalis,* a truly royal plant. Standing by its crown, its fronds were six feet high, with a spread of over six feet. I raised my hat in response to its grandeur.

On another plateau I found a bed of Royals some quarter of an acre in extent, with crowns standing a foot high out of the ground ; very aged plants, a wonderful sight.

I had heard of J. Stewardson finding *Hymenophyllum Tunbridgense* on Clougha, a hill near Trough of Bowland. I searched for a few years, and found it ; but the spring dried up, and it died.

Another find was the rare *Polystichum Lonchitis* (Holly fern) on the Pennine range: there were only a few plants left, I think the last in a native state, and my friend had them covered over with slabs to prevent their being found.

The most cherished find I ever had was *Adiantum capillus-Veneris,* the English Maidenhair. I heard that Mr. Stansfield, of Southport, had found it and I could not rest till I had done so.

When I saw it with its graceful fronds shimmering in the slight breeze, hanging in ringlets down the rock face, it was a sight I shall never forget.

You could not get a plant so embedded in the rock face, but with a penknife one managed a little plant or two ; I got a few fronds with spores and sowed these, getting a grand batch of seedlings, and I have a few pans of them. Again I raised my hat in salutation to such a find. In the same locality I found *Asplenium marinum* in profusion and showed it to a few fern enthusiasts.

In the Duddon valley I found a fine bed of crested Bracken, the only time I have seen it. Mr. Stewardson and Mr. J. Bolton each had a fine pan of *Pteris aquilina congesta,* very fine.

Asplenium Trichomanes grows rampantly on old walls, but varieties are hard to come by ; on one old bridge I know, these plants are all crested. The finest of all was incisum, the best form of which was named Clementii, after its finder Mr. Clement. The last time I saw this was at Mr. T. Bolton's, a friend wanted half and it was cut in two, but both died.

Asplenium viride grows plentifully in the Pennine range but is difficult to cultivate.

Of Scolopendrium vulgare, Mr. Bolton, of Warton, found one of the best on Warton Crag. Mr. Cranfield bought it and called it *S. v. crispum nobile* (Bolton). When I saw it, it had fronds 26ins. long and 6ins. wide, a truly noble plant.

Mr. Bolton had a fine collection of Blechnums, Airey's No. 1 and 2. No. 2 was the best plumosum, a beautiful plant. The best of all was *B. spicant trinervum coronans,* found, I think, beside Wastwater. I have not seen it for years.

A fern that is only found beside Farleton Knot and vicinity is *Lastrea rigida.* Thomas and Henry Bolton found an uncommon one and sowed it, then sowed from its offspring, and ultimately raised a fine form called *crispa* and *crispatissimum,* and crested. They are very brittle.

Of Polypodies, a good few have been found in the north, Hadwinii, Barowi ; the best of the plumose was found by a Mr. Preston, at Silverdale or Yelland: it was a lovely plant. I only know of one specimen now. Wilharris is one of the best, but very scarce. So is *P. v. elegantissimum,* to my mind the pretties of all.

Mr. Foster, of Manchester, found a very good Polypodium in Ireland, a fine crested variety, *grandiceps ;* then Mr. Cowan had a fine one, *P. v. grandiceps* Cowan.

Mr. G. Whitwell had a magnificent collection of *Lastrea montana,* his find of a plumose variety was unique: there were also crested attenuated forms. The Westlake variety was the finest dwarf I have ever seen, but that is gone.

In one area I knew I could always find a crested variety of Athyrium, their variety is legion in the north. Mr. J. Garnett's *A.f.f. setigerum* was one of the best raised ; one of best ever found as *A.f.f. setigerum setiferum,* this was Dr. F. W. Stanfield's opinion. It was found in Langdale by the Society. I got a plant at the time and so preserved it, as it was dispersed as a find.

Of *Polystichum angulare* we have had great variety in the North. Mr. H. Bolton had an excellent variety, to my mind equal to Baldwinii. Mr. Cranfield had the original plant, *P. a. divisilobum plumosum.* Mr. Henwood also had a plant under this name, a grand specimen, which was known as the "Old Lady." She was a grand distributor of spores and her progeny were really first class.

The best of the *Lastrea dilatata* was Mr. Barnes' *grandiceps,* exceptional in its large crests.

Lastrea pseudo-mas angustata, circulated by Mr. Gott, was a most graceful plant. Another, named after Mr. J. Wilson, was discovered by him in Langdale, a graceful tasselled variety. The centre to which all these and many other plants gravitated was Mr. Whitwell's home, Serpentine Cottage, Kendal.

He was the Hon. Secretary of the Society, and all rare ferns came to him, amongst them the most beautiful of all ; *Polypodium Dryopteris plumosum,* found in a sardine tin on Whitbarrow.

To write of the great varieties of ferns in the North and of their Collectors has brought back many happy memories, and to renew these old ferneries is going to be a great work. I am one of the original members and in my 84th year: I trust the revived Society will give a stimulus to a hobby that has declined. Yet there is nothing more beautiful in Nature than these lovely plants. I wish success to the Society and an early restoration of its objects.

ROBERT WHITESIDE.

SOME MONMOUTHSHIRE FERNS

In October last, thanks to a hint from Mr. P. Greenfield, I spent a week at Chepstow, a district which (as far as I can find) has had no attention from our society, at any rate for a long time, if at all. Enquiries made in advance showed that several species had been recorded which, on a short visit, one would not expect to find, such as the Oak and the Beech ferns ; this proved to be the case.

Cystopteris fragilis, however, seemed probable, and there was a good chance of *Dryopteris aemula* just over the border in Gloucestershire. The former of these eluded me, and although during my stay I saw an authentic pressed frond of the latter, I came away without finding its station: though almost certainly very near it on two occasions. Sandstone, from which the fern was recorded, is less frequent than limestone in the area, and this fact helped to account for the innumerable *Scolopendriums* met with.

In the woods, in roadside hedges, in stone walls, with considerable range of slight variation from normal outline, they are the common fern of the neighbourhood. The crispum type is frequent, with wavy undulating frond, but not true crispum, as that is not fertile, while these were. Another type less often seen has a narrow blade, sometimes "warty" and very dull dark green. A type new to me had a blade narrow at base for about a third of its length broadening towards the again narrowing tip: and occasional fronds of the spirale form were seen. None of these were varieties in the usual sense ; the most promising was a form with a very narrow frond, and a small specimen was taken from the roadside on the hill going down to Tintern.

It seems certain that real varieties are to be found, and in fact many have been, fifty years and more ago, by the late Col. A. M. Jones and E. J. Lowe, and others. A visit was paid to the village of Shirenewton, where Mr. Lowe lived for many years till his death in 1900, and where a tablet in the church commemorates his wife and himself. The church is of interest in several ways, especially in having two arches between the west end and the east: they are just far enough apart for an organ to be placed between them on one side, and rather short choir stalls on the other. On the north-west corner of the tower is a small tower, the reason for which is not obvious ; it was perhaps a look-out place of some kind.

The Hall, once Mr. Lowe's property, is now a finer and larger house than formerly. On a wall in the village I found

a possible relic of Mr. Lowe's enthusiasm for ferns, a small crested *Scolopendrium;* this gave me a fair yield of spores which I hope to sow as a memento. This was the only true variety found during my stay, and as suggested, is very likely not a "wild" find.

In many places the Common Polypody is abundant and vigorous, but the scarcity of *Asplenium adiantum-nigrum* is curious. Such plants of it as were seen were very poor things.

Asplenium ruta-muraria and *Ceterach* are crowded on every suitable wall, on one of which facing north-east were two *Ceterach* with 4-inch fronds. Of species that are usually looked to for varieties, there were few, at least by roadsides and in the woods I entered. Permission to do this was always readily given and one met friendliness everywhere.

Athyrium f.f. and *Polystichum angulare (setiferum)* were seldom noted, and I think were actually scarce. This was also the case with *P. aculeatum;* of this only five or six specimens were seen. *Dryopteris dilatata* and *D. spinulosa,* especially the latter, were very scanty, too. *D. filix-mas* is plentiful in places and in the prolonged summer-like weather had newly unfurled fronds of a very lovely pale apple-green colour.

I had nearly forgotten to mention *Asplenium Trichomanes,* as abundant as *Ceterach* and *A. ruta-muraria,* and growing with them.

My expeditions were done by one of the numerous 'buses that run in every direction, mostly quite often, and then walking homewards, or sometimes until a convenient 'bus was encountered.

On one trip a long distance was on limestone, then suddenly a change to sandstone became obvious, as first a patch of Whortleberry in the hedge was noticed, and then an *Erica;* and soon after, *Blechnum spicant* in some quantity. This heath formation did not extend far, and was the only instance I met with.

The number of species is about the average for any one particular district. My object was exploration rather than concentration, which alone can lead to the finding of varieties; general probability and, as already stated, past history, should lead to finds in an area in which a most enjoyable holiday can be spent.

E. A. Elliot.

OBITUARY.

With great regret the Society has to record the death of its aged member, Mr. W. F. Askew, of Grange, in Borrowdale. He was in his 92nd year, and had only recently celebrated his diamond wedding. To his widow, herself aged 83, and to his three sons and three daughters, we extend our sincere sympathy.

Mr. Askew, a native of the Windermere district, went to Borrowdale over forty years ago. His Nursery, on the road between Lodore and Grange, is well known to visitors to the Lake District. An account of a visit paid to it by members of the Society was published in the "Gazette" for December, 1938. It is surprising and highly creditable to him that in spite of the hard work which his business involved, he found time to take a prominent part in local affairs. For many years Mr. Askew exhibited at the Southport Flower Show. In 1933 he was particularly successful, taking prizes in the classes for (a) twelve ferns, (b) three Polypodiums, and (c) three Athyriums. He was well known to a large number of the members of the Society.

R.W. and P.G.

FERNS AT SOUTHPORT SHOW, 1949.

(Contributed.)

The Society's Challenge Trophy was again won by Messrs. J. Brookfield and Son, of Birkdale, Southport, with a large group of ferns well displayed. Messrs. Grubb and Son, of Bolton-le-Sands, were second with a group of approximately the same size and of excellent quality.

Messrs. Brookfield were first also in the classes for Twelve ferns; Six ferns (dissimilar); Three Polypodiums; Three Polystichums; Three Athyriums; Three dissimilar ferns; and One fern.

Messrs. Grubb put up a collection of ferns in the non-competitive section for which they were awarded a silver-gilt medal.

Mr. C. W. Holt included ferns in an exhibit of Alpine plants and dwarf shrubs, for which he also was awarded a silver-gilt medal.

Mr. Reginald Kaye, of Carnforth, received a silver medal for an exhibit which included a table rock garden, shrubs, and ferns. As an amateur exhibit, a very good pan of Scolopendriums was put up by Mr. Hayhurst ; and there were other exhibits of merit.

Some special publicity was gained by the insertion in the local newspaper of an amusing account of an interview with Mr. John Brookfield, in which he commented on the lamentable lack of interest taken in ferns at the present day.

Actually our veteran exhibitor was far from being gloomy, having had a most successful season, carrying off not only our Trophy, but the Sangster Trophy for ferns at the Liverpool Flower Show, where it is understood increased interest in ferns is in evidence.

A NOTE ON SOIL STERILIZATION.

My method of sterilizing soil for spore sowing is this: I use the old-fashioned stone 1lb. jam jars. I fill them almost to the top with a mixture of sandy loam, peat moss, and a little fine charcoal, wet it well and place the jar (not submerged) in a pan and boil it for at least an hour. This kills all bacteria and the soil is perfectly clean ; then when cold, sow the spores and place a piece of glass over, this keeps the moisture in.

With regard to sterilizing the soil in the open garden, I use Sterizal, giving a liberal dressing of it in the spring ; fork it well in and leave for one month, then turn it over again ; it is amazing to see the dead wire-worms, etc.

The only pests then are Slugs. Here again I use Metaldehyde and bran, cost about 9d. for a bucketful, and great results.

A. Brunt.

FERN NOTES.

In the last issue of the " Gazette " there is a note from my dear friend the late Robert Bolton, asking for information as to the existence of *Asplenium fontanum*. I have two or three small plants of this, raised from spores some years ago. The original plants and some seedlings were destroyed in my frames by slugs. Now, with one of the proprietary meta preparations,

slugs can be eliminated, but some types are much more effective than others. I am hoping to save these small specimens of *fontanum*.

The so-called fern-fly or canary fly used to spoil my Polypodies of Cambricum type under glass by sucking the sap from the fronds, leaving the plant as if it had been attacked by chrysanthemum miner. D.D.T. liquidated this enemy. Indeed, I should regard the advent of D.D.T. as the greatest advance in insecticides.

Woodlice used to infest my indoor fern house, but, after one application of 20% liquid D.D.T. I have been unable to find one wood-louse. Then again there is that arch-enemy of ferns, Otiorhynchus sulcatus (a Weevil—EDITOR) so graphically described in old numbers of the "Gazette," I never saw a Vine Weevil, but had it found lodgement in my indoor fernery, I should have expected the same tragic fate that befell Glasnevin. I believe D.D.T. means death to all Weevils.

I was much interested in the butter dish method of sowing spores, so ably described by the Doctor in pre-war years. I remember one fern failing to respond to this method, viz., *Asplenium marinum*.

Mr. Whiteside and I had a plant each from Heysham Rocks, Morecambe, several years ago. Having failed in a sowing of spores, I left the pot of *marinum* in the same situation, and finally young plants appeared on the ground adjoining, and I have a few young plants doing well. One fern under glass, known as the Madeira fern I believe, has thrived enormously, and each season I have almost to use a small tooth-comb to get rid of it as far as possible. It was admitted as a British fern in respect of one appearance in Northern Scotland, but with me it is a weed.

Many unnamed seedlings of *Scolopendrium* arise in an indoor fernery, and *Asplenium Trichomanes cristatum* soon carpets a square yard of soil indoors.

J. D. DIXON.

NEW MEMBER.—Mr. J. Spedan Lewis, F.L.S.,
Stockbridge, Hants.

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THE BRITISH PTERIDOLOGICAL SOCIETY

THE SOCIETY originated, in September 1891, in the Lake District with headquarters at Kendal. Its members are distributed throughout Great Britain and Ireland, with some in the Dominions and U.S.A. Its objects are :—

(i) The Study of Species and Varieties of British Ferns ; and

(ii) The Recording of Information with regard to Ferns generally.

The organ of the Society is *The British Fern Gazette* published usually twice a year.

The Society is affiliated to the Royal Horticultural Society.

The Annual Meeting is held when possible at some place where ferns are abundant and from which excursions for fern hunting can conveniently be arranged. These excursions are an important feature of the Society's activity.

Fern Fronds can be exhibited by members and to any new fern reaching a high standard the Society will award a Certificate.

Members are invited to communicate with the Hon. Secretary on subjects of interest with regard to British Ferns. Fronds may be sent to him to be identified or named at any time.

A collection of British Ferns is being formed with the help of the Society in the Royal Horticultural Society's Gardens at Wisley.

The Committee is endeavouring to increase the membership of the Society and,, through this and by other means, to encourage the more general cultivation of the varieties of British Ferns. Any lover of horticulture is eligible for membership and the subscription is 10s. per annum (due in advance at or immediately after the Annual Meeting) which entitles members to copies of *The Gazette* and to any help the Officers of the Society may be able to give.

The Hon. Treasurer or Hon. Secretary will be pleased to supply members who may desire it with Bankers' Orders for the convenient payment of subscriptions.

Further particulars may be obtained from the Hon. Secretary,

J. R. PULHAM, Hon. A.I.L.A.,
71, Newman Street,
London, W.1.
Telephones : Museum 0515 ; Edgware 4028.

THE ROYAL HORTICULTURAL SOCIETY

FOR nearly 150 years The Royal Horticultural Society has been the leading Society in British Horticulture, and is now the largest in the world. For an annual subscription of two guineas a Fellow is kept in touch with all its operations, has the right to attend all its shows, to visit its gardens at Wisley, and to obtain advice on horticultural matters. Larger subscriptions carry increased privileges. All persons who are interested in horticulture are eligible for membership, and full particulars may be obtained on application to:

THE SECRETARY,
THE ROYAL HORTICULTURAL SOCIETY,
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THE BRITISH PTERIDOLOGICAL SOCIETY

President: A. H. G. Alston, B.A., F.L.S., Dept. of Botany, British Museum (Nat. Hist.), Cromwell Road, London, S.W.7.

Hon. Secretary: J. R. Pulham, Hon. A.I.L.A., 71, Newman Street, London, W.1

Hon. Treasurer: J. W. Dyce, "Hilltop," 46 Sedley Rise, Loughton, Essex.



First Prize in Class **14** *Competitive Exhibit, Southport,* **1949**

THE
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NEW SERIES

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EDITORIAL

Members will be glad to know that our Secretary, Mr. J. R. Pulham, has recovered from the serious illness and operation of last autumn, and is regaining his usual vigour, complete restoration of which we shall all wish him in due course. His interest in, and enthusiasm for, all his numerous affairs is undiminished.

Our member, Professor Irene Manton, has published a scientific book on "Problems of Cytology and Evolution in the Pteridophyta." The processes of evolution are compared in two groups of plants, the cruciferæ in flowers, and the Pteridophyta, which includes ferns and their close allies. It is claimed for the book that it is the chief authority for the latter group, hitherto considered (with a few exceptions) as too difficult for accurate study. We hope Professor Manton will allow us to congratulate her on successfully undertaking such a formidable, but most valuable, work.

Another member, Mr. H. G. Rugg, of Dartmouth College, Hanover, U.S.A., has a most interesting article in

AUG 15 1950

the latest issue of the American Fern Journal on the Male Fern *(Dryopteris Filix-mas)* and its hybrids *D. Filix-mas* × *Goldiana* and *D. Filix-mas* × *marginalis*.

Goldiana and *marginalis* are not British, of course, but it will be news to many of us that in the localities mentioned by Mr. Rugg, *D. Filix-mas* is not only rare, but occurs in very small numbers, and has a struggle to maintain its existence.

In our last issue, the name of a new member, Mr. J. Spedan Lewis, F.L.S., was inserted in a most obscure place on the last page of the "Gazette." Mr. Lewis has made no comment on this, but we do so ourselves, as it is not where such announcements should be placed: though it was, in this case, inevitable, as material for the "Gazette" was in our printers' hands, and there was not time to make alterations in the arrangement of material. Mr. Lewis's distinction as an F.L.S. will be specially valuable, as it is one which is now all too rare in the Society.

We are particularly glad, also, to say that contact with the American Fern Society has recently been strengthened in various ways, and not least by the acquisition of their Treasurer, Mr. Walter S. Allen, as one of our subscribing members, at his own request, which we take as a real compliment. The Editor-in-chief of their Journal (there are three editors), Mr. C. V. Morton, has written expressing the hope that closer co-operation between their society and ours may be established. We cordially agree, more so as Dr. F. W. Stansfield had begun a connection with their society which, unfortunately, lapsed after war began.

If at any time members should come across bound volumes or single numbers of early issues of the "Fern Gazette" in second-hand bookshops, at a reasonable price, and wish to sell them, we should be glad to know of this.

The hot weather just before mid-May, brought new fronds on rapidly; at least, here in the Thames Valley, but more remarkable was the height of some species—fully one-third taller than usual: especially in the Oak Fern and Limestone Polypody.

The Editor would be glad to have notes on this or any other unusual fern growth which members have noticed this season; and he takes this opportunity to remind members in general that material for the "Gazette" is always an urgent need and that, without contributions, it will be impossible to keep up two issues a year.

THE LADY FERN

Athyrium Filix Femina

The Lady Fern, like the Male Fern, was christened without any regard for sex, and simply on account of the relative delicacy or coarseness of make ; but though modern scientific research has shown that in most ferns, as in most flowers, the two sexes exist, to which the so-called Lady Fern is no exception, the equally modern research of the fern hunter has proved that in diversity of costume and delicacy of taste, the lady-like element comes out very strongly indeed. No fern, in fact, in all the world has, by virtue of its sportive character, adopted so many fashions, beautiful or curious, as has the Lady Fern. Even with the common types, which we find in such profusion in ferny country places, in glens, damp woodlands, ditches, and indeed, in most shady places in the vicinity of water, we often find it difficult to match exactly any two plants in detail of cutting, texture and habits. Like ladies of the human persuasion, each seems to have a taste of its own and Dame Nature, sympathetically, has invested them with the faculty of indulging it in this way, though, as a rule, to a limited extent.

Every now and again, however, for some reason best known to herself, she invents a new fashion entirely. How, we know not. All that we know, as fern hunters, is that some fine day, rambling through the Lady Fern's particular domain, we find some regal form enthroned in state amid her court of commoners, or, equally meritorious, but more modest, endeavouring to hide her unique charms behind her neighbour's flounces, so to speak.

To drop metaphor, it is a simple fact that while the *Athyrium* ranks with the three or four of our native species which have given the bulk of varietal sports, it eclipses them all in examples of quite peculiar formation, to which no other fern has so far afforded parallels.

Normally, the Lady Fern, delicate as is its make, is a remarkably robust and sturdy fern, and under favourable circumstances, such as we find in a secluded glen or ravine, walled in by shading trees in such a way that the blustering breeze is entirely excluded, and traversed by a wild cascady stream which saturates at once both soil and air with congenial humidity, we may find huge feathery specimens shoulder-high and a yard and more through. The freer the growth, as a rule, the more the fronds are cut into sub-divisions, this extending even to the third degree (tripinnate) under the conditions

described. The fern is quite deciduous, the fronds dying to the ground in autumn, a fact which the amateur cultivator must bear in mind, as undoubtedly many deciduous plants perish by being assumed to die in the autumn instead of simply going to sleep, subsequent neglect in watering confirming the wrong assumption. In cultivation, ordinary garden soil does quite well, but a good leafy compost does better; the chief thing is protection from drought.

The varieties of the Lady Fern, in the main, divide themselves into two classes, as in other ferns, viz., the tasselled and the extra feathery ones, but added to these characters we have others forming the unique combinations we have referred to. The Victoria Lady Fern *(A. ff. Victoriae)* stands at the head of this section, and yet was found by the side of a country lane in Scotland in all its curious development. In this fern the fronds are very long and narrow, the pinnae or side divisions are also long and slender and, like the frond tip, are divided at the end into slender many-stranded pendulous tassels. The marvel, however, comes in the fact that these side divisions are not set on singly at nearly right angles to the stalk, as in most ferns, but are set on in pairs at right angles to each other, and as each pair has its fellow pair on the opposite side of the midrib, the two form a cross, and, of course, the two rows from end to end of the frond form a delicate lattice work bearing two rows of charming tassels. Where, we ask, in all vegetative nature, can be found a parallel to such a "sport?" Finally, on close examination, it is seen that even the smaller sub-divisions are set on in pairs in like fashion, so that the pinnae are formed of tiny crosses, too. The spores of this variety always yield typical plants, but we have never yet seen a seedling attain the full size of the parent, nearly four feet.

Other peculiar types are the Frizelliæ section, crested and uncrested, in which the side divisions are bunched up into round knobs, giving the fronds a resemblance to a string of beads. *Vernoniae* and *conioides* are examples of curious makes of the pinnae which cannot be described but have no parallels. The crested or tasselled forms are many, varying considerably in make and habit, and ranging from pretty little flat tassels up to ball-like dense ones, where the flat frond is maintained, or running into single balls of fine mossy-looking growth, where the fronds branch over and over again to form that effect *(A. ff. acrocladon* and *uncoglomeratum)*.

The varieties, indeed, which are good are so numerous that space precludes description, and we must refer to published catalogues.

The plumose varieties are by many considered the finest, and in these the cutting is carried even to the fifth degree (quinquepinnate), imparting an extremely feathery appearance. The wild finds are *Axminsterense, Horsfall, Wills, Hodgsonae, Pounden* and others, all quite distinct from each other. The Axminster, however, has proved the greatest prize, as a wild find, by yielding first *plumosum elegans,* a still finer cut form, and through this the really marvellous section of superbums, crested and uncrested, among which are the two absolutely finest Lady Ferns extant. *A. ff. plumosum Druery* (uncrested) and *A. ff. superbum percristatum* (crested to the fourth degree), while at least a dozen other distinct crested and uncrested plumose forms are in the same section. These varieties by themselves would suffice to stamp the Lady Fern as standing alone among the varied ferns for versatility of taste and exquisite delicacy in expressing it.

CHAS. T. DRUERY, V.M.H., F.L.S.

The foregoing article was originally published in two parts in Vol. I, numbers 8 and 9, by the then Editor. Some of the varieties mentioned are now perhaps historic names only, but others, including some of the best, are still cultivated.

EDITOR.

OBITUARY

Charles Alfred Weatherby, 1875-1949

With deep regret we record the loss by death of Dr. C. A. Weatherby, of the Gray Herbarium, Harvard University, Cambridge, Mass., U.S.A., an Honorary Member of the British Pteridological Society since 1938. By the courtesy of the Editor of the American Fern Journal (Mr. C. V. Morton) we reprint extracts from a memorial number obituary notice in that journal, written by a former Treasurer of the American Fern Society.

In earlier days of systematic botany the science was usually dependent upon a patron or presiding genius, and such a place, I think, Charles Alfred Weatherby occupied in the Fern Society.

In 1919 I heard that C. A. Weatherby was to come as an assistant at the Gray Herbarium, in fact had already come on from Hartford . . . (he) looked much the same then as in later life, rather thin, erect, always well-dressed, with a short-clipped mustache (which was to become whitened in later years), always polite, ready to help.

He was born on Christmas Day, 1875 at East Hartford, Connecticut, and entered Harvard in 1897, where his chief interest was in languages. In 1929 the Weatherbys set up their household at 27, Raymond Street, Cambridge (Massachusetts) ; the location lent itself to the hospitality offered to Gray Herbarium visitors (his) connection with the American Fern Society began long ago. By 1915 he was one of the Editors and remained so until 1940. He was President in 1943 and 1944. But by no means did he confine himself to the ferns. His interest was much more general . . . helped by Mrs. Weatherby, who is an accomplished artist. In London in 1933, I ran across him quite by accident in the rooms of the Linnæan Society . . . and in 1937 he passed just ahead of me at Berlin and Paris, where he was highly thought of by the Curators. When Mrs. Svenson and I returned to London . . . we left for Ireland, while the Weatherbys got an automobile and covered a considerable bit of the countryside, being especially interested in the sea coast and moors of northern Cornwall.

It is natural that he should have achieved a wide reputation and many honours in various fields of botany. He was one of the leaders in the Connecticut Botanical Society and largely responsible for the admirable "Catalogue of the Flowering Plants and Ferns of Connecticut." At the Gray Herbarium he was Assistant Curator in 1931, Senior Curator in 1937, and retired in 1940 as Research Associate. Also he was a member of the British Pteridological Society, and an honorary member of the British Society for the Bibliography of Natural History, Councillor of the American Academy of Arts and Sciences, an Editor of the American Journal of Botany, and Chairman of the Committee on nomenclature of the Botanical Society of America, President of the American Society of Plant Taxonomists, and an Editor of "Brittonia."

At meetings of the International Botanical Congress at Stockholm this coming summer, he will be greatly missed ; he had been appointed as Vice-President of the Section on Nomenclature. Though in frail health he worked regularly at the Gray Herbarium and all were saddened to learn that he died suddenly from the effects of a blood clot on the morning of June 21st (1949).

H. K. Svenson,

American Museum of Natural History,
New York.

BOOKS ABOUT FERNS

A number of names, additional to those given in the last GAZETTE, have been sent by Captain A. E. A. Dunston and Mr. E. W. Platten, whose help is here acknowledged.

On British Ferns only, Captain Dunston names:—

S. L. BASTIN: *How to know the Ferns.* Illustrated 1917.

J. BOLTON: *Filices Britannicae.* Two parts, 45 coloured plates showing 46 figures, 1785-90.

F. G. HEATH: *The Fern Paradise.* Illustrations uncoloured, with an original photograph. 6th edition, 1880. Publishers, Sampson, Low, Marston, Searle and Rivington.

N. B. HODGSON: *Grasses, Sedges, Rushes and Ferns of the British Isles.* Coloured illustrations. Eyre and Spottiswode, 1949.

M. PLUES: *British Ferns.* Coloured plates. No date.

MARION S. RIDLEY: *A pocket guide to British Ferns* (1881). Published by David Bogue.

Mr. Platten's list is:—

F. G. HEATH: *The Fern Portfolio.*
A Fern Book for Children.
British Ferns.
The Fern Paradise.
British Fern Varieties.

The first four of these, and his book, *The Fern World,* are mentioned in the fifth *(British Fern Varieties),* which was published by Kelly (London); undated.

The Journal of Horticulture and Cottage Gardens, published in 1863; *The Fern Manual,* by contributors to these two papers.

Messrs. Treseder, of Truro, mention, in a letter, the following:—

J. H. CRABTREE, F.R.P.S.: *British Ferns and How to Identify Them.*
This was published by the Epworth Press, who say the date was 1919.

POLYSTICHUM NOTES

For several reasons, one being that *aculeatum* is my favourite among the larger ferns, I found occasion to read up

all the available information ; and in so doing, discovered what a tangled story lies behind the names, familiar to us all, of the Polystichum group.

Linnæus brought them, as he did many other ferns, into his genus *Polypodium,* and only recognised two: *Lonchitis* and *aculeatum.*

In 1775 Forskal added a third species and called it *setiferum.*

Three years later, in 1778, Hudson, in Flora Anglica, revised the naming as *Polypodium Lonchitis, P. lobatum* (the stiff, least divided, frond) and *P. aculeatum* (the lax, more divided frond).

About ten years later, Willdenow not only re-arranged the species but changed the genus and gave *Aspidium Lonchitis, A. aculeatum* (Hudson's *lobatum) A. lobatum* (a plant or form not previously described) and *A. angulare* (Hudson's *aculeatum).* He also described and figured a plant as *A. fuscatum.*

Kunze, later on, apparently dropped *Lonchitis* as a species and reduced the others to *lobatum* and *aculeatum* (Hudson's names) retaining *Aspidium* as the genus.

The names most familiar to us were the introduction of a German botanist, Roth, who made the genus *Polystichum,* and the species *Lonchitis, aculeatum* and *angulare.* In this way *lobatum* as a species became obsolete, re-appearing as a variety in Deakin's "Florigraphia Britannica," published between 1838 and 1848, and being placed under *aculeatum,* coupled with a newly named plant not previously mentioned in my account.

This was the variety of *aculeatum* known as *lonchitidoides,* i.e., resembling *Lonchitis.*

Although short, the story is clearly a complicated one, and this can be seen by reference to the table set out below.

I have only taken it thus far in order to introduce the two names, both varietal, of *lobatum* and *lonchitidoides,* and to put on record my experience and ideas about them. Earlier views can be found, at length, in Newman, *History of British Ferns,* 1840 ; and T. Moore, in his octavo edition of *Nature Printed British Ferns,* Vol. I (1859).

The main points in var. *lobatum* which distinguish it from sp. *aculeatum* are: the fronds are narrow and rigid: the pinnules are not auricled, except the larger basal ones ; and nearly all of the pinnules are decurrent or confluent. That

description is an abbreviated one from Moore's book, and describes a plant which does appear to exist and to turn up quite fairly often where *Polystichum aculeatum* grows or can grow.

My experience of it is admittedly very small and for that reason, far from satisfactory: a plant which it seemed reasonable to set down as *lobatum* was given me in 1948 direct from Dorset by the kindness of Mr. P. Greenfield.

The fronds it then bore remained in good condition till the following year and could thus be compared in situ with new ones, which were produced sparingly but sufficiently to see that there was a difference, tending towards *aculeatum*. The possession of this plant, which is being grown in the open air, should help me to disprove, or prove, my idea that many finders and recorders of the variety have only seen a particular plant once. Fronds have there and then been gathered and preserved; but may it not be that a visit to that same plant, over some four or five years, would give a very different idea of its real nature?

My suggestion is that only observation of this kind can really settle the question, and that this is something well worth doing by those who have the opportunity.

There is little difficulty in recognising the variety *lonchitidoides* when found growing; but, before going any further, it will come as something of a relief to know that this name has now been changed to one more manageable. Mr. H. A. Hyde and Mr. A. E. Wade, in their valuable book "Welsh Ferns," give the name *cambricum* to this variety, and I am using that henceforth, quoting from their description: "This variety is liable to be mistaken for *P. Lonchitis,* but may usually be distinguished therefrom by (a) the two distinct lobes, basiscopic as well as acroscopic [i.e., below and above Ed.] at the base of the lowest pinnæ; (b) the relatively coarse main serrations which are almost lobes; (c) the sharp teeth in between or on the sides of the main serrations."

In 1935, I made the mistake referred to, and found it out a year later. Since then, three plants have been sent me, all as *P. Lonchitis;* the third is now in my garden, and has fronds of the *cambricum, lobatum* and very nearly *aculeatum* type. It does seem, therefore, probable that *cambricum* is a stage in the growth of *lobatum* passing into *aculeatum,* but I am waiting with interest to see what fronds appear this year.

In September, 1947, a youngish plant came my way from Surrey, in which some fronds were *aculeatum,* and others, of that year, *angulare*. This fern is now entirely the latter, and a fine big plant.

Authority	Genus		Specific Names	
Linnaeus - -	*Polypodium*	L.	*aculectum*	
Forskal - - -	,,	,,		*setiferum*
Hudson - - -	,,	,,	*lobatum* - - - - - - - - - - -	*aculeatum*
Willdenow - -	*Aspidium*	L.	*aculeatum* - - - - - - - - - -	*angulare. fuscatum*
Kunze - - -	,,	,,	*lobatum* - - - - - - - - - - -	*aculeatum*
Sir J. E. Smith -	,,	,, L.	*aculeatum, lobatum* - - - - - - - -	*angulare. aculeatum* b.
Roth - - -	*Polystichum*	L.	*aculeatum* - - - - - - - - - -	*angulare*
Newman (3rd ed.)	,,	,, L.	,, ,, - - - - - - - - - -	,, ,,
Deakin - - -	,,	,, L.	*aculeatum* var. *lobatum* = var. *lonchitidoides*	,, ,,
Hooker & Arnott -	*Aspidium*	L.	*aculeatum, lobatum,* b. *lonchitidoides* - -	,, ,,
Sowerby & Johnson	*Polystichum*	L.	*lobatum* = *aculeatum* - - - - - - -	,, ,,
Moore - - -	*Polystichum*	L.	*aculeatum* var. *lobatum* f. *lonchitidoides* -	*angulare. setiferum*
Bentham & Hooker	*Aspidium*	L.	*aculeatum* var. *angulare*	
Hyde & Wade - -	*Polystichum*	L.	*aculeatum* var. *cambricum* (=*lonchitidoides*)	*setiferum* var. *hastulatum*

NOTE.—L. in this chart stands for *Lonchitis, not* Linnaeus.

Varieties are placed below their cognate species and are marked by the signs var., f., or b.

Several other names for the species *aculeatum* and *setiferum* (*angulare*) given by various Authorities, have been omitted, as of no consequence now and merely confusing.

Under this species, there is a variety described in "Welsh Ferns" by the name *hastulatum,* as follows: "Lowest pair or pairs of pinnules pinnatifid to pinnate and in particular the acroscopic basal lobe of the lowest pinnule free to the midrib; fronds usually large."

There are records in this book from Pembroke and Carnarvon; T. Moore and E. J. Lowe (who perhaps copied from Moore) say it has been found in Devon and Surrey; and add that the stem of the pinnules is slender and distinct. Lowe remarks that it is a small growing plant, and Moore gives figures in his octavo and folio editions which show—as might be imagined—fronds resembling a rather sturdy or coarse *acutilobe*. It may be added that the varieties here mentioned are "natural" ones, in the sense that they are not unique (as, e.g., P. ac. pulcherrimum was), nor raised by crossing; and may therefore be met with in the same—or other—localities named, by the observant fern-hunter.

E. A. Elliot.

A PECULIARITY IN VARIATION

In a letter written by Colonel Jones in 1887, he refers to Polystichum angulare decompositum grande as a very fine form and observes that unlike decompositums generally, it showed most development half-way down the frond.

By a strange coincidence, two days after reading the letter, the writer, by a mere chance, came upon a large *angulare*—one of two or three *Polystichums* among a few Lastreas in a district almost destitute of ferns—which, on examination, proved to be a *decompositum*. The variation was hardly noticeable at the base and tip of a frond but was conspicuous in the middle.

It is probable that the new find is greatly inferior to Jones's *grande;* and the similar increase of development towards the middle of the frond seems therefore all the more remarkable.

Any information bearing on the matter which members can supply would be welcomed.

P. Greenfield.

THE VAGARIES OF POLYSTICHUM ANGULARE PULCHERRIMUM

1

In the case of *Polystichum angulare*, and *Polystichum angulare* alone, the adjective "pulcherrimum" denotes prothallic extensions of pinnæ and pinnules. The somewhat defective nomenclature did not pass unnoticed by some of our authorities, but it had become too well established to be altered. It has at least been used consistently.

The general effect of the variation is to give a frond a feathery appearance, more or less. The extensions when well developed are usually falcate and are frequently drawn out into thread-like processes.

The variation is so inconstant in many of the varieties that several fronds on a plant or sometimes the whole plant may hardy be distinguishable from normal angulare, perhaps over long periods. The more finely divided forms are notoriously difficult to cultivate. Most of them, if not all, have probably now gone the way of all vegetation, and their like may not be seen again. It seems therefore the more desirable to place on record all that is known about the variation ; and this paper is an attempt to do so.

The first recorded find of a *P. angulare pulcherrimum* is that of Jackson of Barnstaple, about 1860, not very long after hunting for varieties began seriously. Jackson's name is not well known, even to some of our older members, but he was, in fact, a successful hunter in his time, and the importance of recognising him as such will appear later in this article.

In 1862 Moly found his first *pulcherrimum,* and a year later another was found by Mrs. Agar Thompson and was named after her. Another was found by her brother, the Rev. C. Padley, and still another by Dr. John Wills. Several more were subsequently found by Moly, one of which was his famous variegatum, with a particularly delicate constitution, and another, a fairly robust form known as his "green pulcherrimum." That is believed to complete the record of pulcherrimums found wild, and it was stated in 1919 that the two last only had survived. The variegatum may now be lost, but divisions of the "green" form exist in the writer's garden and elsewhere.

Before raised varieties are considered, it may be well to set down such further information as is available about the wild finds. Probably they all came from Devon or Dorset,

the counties most prolific of angulare. Some of the finds were increased by division and distributed to some small extent. It is on record that Col. Jones, of Bristol, had a plant of Mrs. Thompson's variety and that he grew it for ten years before he got a characteristic frond. Dr. F. W. Stansfield in 1897 had a plant of the same variety which at that time appeared perfectly normal. Wills had his own find in character for years, growing weakly: in an effort to renew its strength it would partially lose its character, and finally it did, apparently, lose it altogether, as did the forms collected by Jackson, Padley and Mrs. Thompson. Dr. Stansfield found Wills' form a bad grower so long as it was kept true (which was possible only by extreme care in cultivation). It was liable to sudden collapse or to permanent reversion to normal appearance and to normal vigour.

He considered the "green" pulcherrimum on the whole the most satisfactory because, although nearly always producing some normal fronds, it produces with them one or more of true pulcherrimum character. On one occasion after he had grown this fern for 25 years, a plant, probably the one which was a bud, or crown, sport from the original, produced fronds which were all of the pulcherrimum character, and this good behaviour continued for some years. The writer's plant is a selected offset from the Doctor's improved form, but does not behave so well. The quality of the fronds varies from very good to almost normal. For some years the best fronds have come from the same part of the caudex.

The Doctor's plant of Moly's variegatum was the most "miffy" plant in his collection. The variation—the upper pinnules turn to shades of yellow and orange as the frond matures—was really fine when the plant was in good condition; but of course, the loss of chlorophyll weakened the plant, and it suffered further by inability to form adequate roots, the few roots made being thick and fleshy and liable to be killed by the slightest injury. Prothallic extensions in this variety were not excessive, but were fairly constant as compared with the occasional extravagant outbreaks of the intermittent forms. Fronds, however, frequently failed to develop properly. Normal fronds were never produced.

A question which is likely to occur to the reader's mind is why the finding of angulare pulcherrimums came to an end with the death of Moly. This cannot very easily be answered. Any suggestion that later hunters have been less observant can at once be refuted. It is equally wide of the mark to suggest that they had forgotten the possibility of finding this variety. For many years one veteran hunter, on setting out

on the Society's excursions, would always remark: "We must find that pulcherrimum." Nor could the variety have been out of the mind of that keen hunter of the early years—Wollaston—who was the first to discover apospory in angulare —Padley's find. Let us consider whether there is a factor common to the experienced hunters who made the finds, and a different one common to the equally experienced hunters who made none. The fortunate ones resided near their hunting grounds, and it is more than likely that they examined these areas at least once a year. Certainly this was so in the case of Moly in an enhanced degree, and he made the greatest number of finds. The other hunters lived at a distance from the south-western counties, and so far as the outings arranged by the Society were concerned, it was the practice to go to a different centre every year and sometimes to go north instead of south. This being so, and taking into account that the intermittent forms may appear normal, or nearly so, for several years consecutively, and more elaborate forms were likely to have a short life, the odds on finding this variety were heavily in favour of the resident hunters. Other questions, including the origin of the wild forms, cannot well be discussed until the raised forms have been dealt with.

2

The raising of progeny from the foregoing wild finds is a depressing story. Many of the finds died without issue. Some of them, however, were increased by division.

The possibility of aposporous propagation from vegetative outgrowths of the tips of pinnules was discovered by Wollaston in 1884 on examination of his plant of Padley's *P. angulare pulcherrimum;* but attempts to propagate the fern by this means generally produced degenerate weaklings of no value.

One of the wild finds—Moly's variegatum—did, however, produce spores. It is hardly necessary to say that they were few and far between. A sowing made in 1911 produced plants from 1912 to 1916, the offspring being mainly a slender form of angulare with no pulcherrimum character or other variation. Ultimately one good plant was raised from spores, the variation being slightly inferior but the constitution somewhat stronger, as compared with the original plant. Seedlings from this raised plant resembled it more or less and were distributed. The original plant in early life produced a number of bulbils which were distributed, but it is not known whether any plants raised from them are now in existence. Mr. Cranfield had a bulbil or division of the original from which he was able to make several sowings, and produced

seedlings of varying character, one of which only a few years ago closely approached the beauty of the original and gave him great satisfaction.

A number of pulcherrimums have been raised from spores of other forms of angulare. Dr. F. W. Stansfield raised one from spores sent him by Col. Jones, supposed to be from Jones's deorso-pinnatum, but they were apparently mixed with spores of a polydactylous strain. The raised plant was remarkable in having spring fronds of true pulcherrimum type with polydactylous tips: the autumn fronds showed little pulcherrimum character, being merely polydactylous and somewhat plumose. The constitution of the plant was all the stronger for the polydactylous strain, but its erratic behaviour was unsatisfactory and it was ultimately discarded as worthless.

Another pulcherrimum was raised by H. Stansfield, probably from *P. angulare nitescens,* itself derived from Padley's tripinnatum, and this developed into a very fine plant which became known as H. Stansfield No. 1, and was illustrated in the *Gazette,* Vol. 2, No. 21 (September, 1914).

It proved exceedingly difficult to grow. In passing, it may be mentioned that Dr. F. W. Stansfield laid down a frond of this plant when he first received it from his brother, and raised a few weaklings, of which two survived and, after careful cultivation till 1916, were found to be percristatums—of a somewhat peculiar type. This result surprised even the raiser, familiar as he was with the freakishness of *angulare pulcherrimums*.

A somewhat similar form, H.S. No. 2, went to Mr. Cranfield, who raised from it several fine, and rather more robust, but otherwise slightly inferior, forms. The parentage of this form is unrecorded, but it may have been one of the plumose divisilobes.

Among other ferns raised at Sale was one named *P. angulare divisilobum foliosum H.S.* This plant went to Mr. Henwood at Reading, and was more productive of spores than most plumose divisilobes. It proved to be an excellent parent and produced plumosums, divisilobes, plumose-divisilobes, pulcherrimums and pellucidums.

One of the pulcherrimums, after careful cultivation, reached a fine state of development. It was shown at the meeting in 1922 and is illustrated in Vol. 4, No. 12 of the *Gazette*. Another pulcherrimum raised in 1926 by H. Stansfield is depicted in Vol. 6, No. 10. The parentage is not

stated, but it is unlikely to have been a seedling of rarefactum or even foliosum.

Other seedlings raised by Dr. Stansfield from *P. angulare plumosum rarefactum*, a fine fern from the Sale nursery, and itself shown with some of its progeny at the Annual Meeting in 1920, were given the names of birds' feathers, and the best one was Pluma Paradiseae. It is portrayed in Vol. 5, No. 2. The Doctor considered that these seedlings when fully developed, showed refinement of detail not to be found in any other section. All these pulcherrimums were very difficult to grow and it is doubtful whether any of the finer forms are now in existence. They had to be kept under glass. It may, however, be mentioned that a very inferior seedling of this type, given to the writer to try outdoors, has in fact survived —no doubt the reward of vice rather than of virtue. After the first year it showed some character, but soon lost it. It was unvisited for four years during the war, and its identity forgotten. Last year, 1949, a very dry one, it unexpectedly produced a frond of pronounced pulcherrimum character, sufficient, taken in conjunction with its small stature, to indicate its origin. One or two seedlings have similarly survived in Mr. T. H. Bolton's garden.

The best of the raised plants, though generally perfectly formed, differed considerably among themselves in fineness of detail and in delicacy of constitution. The number of forms might be extended if spores could be sown from a larger selection of parents.

3

The foregoing account of wild and raised forms would have provided a more adequate basis for speculation as to the origin of the wild finds and other mysteries, if it could have included information about the surroundings of the plants found wild. Desirable data would be the exact geographical position, distance from the sea, type of habitat, e.g., bank of a sunk road, soil, degree of moisture, amount of shade (if any), density and description of surrounding vegetation, and whether other ferns in the neighbourhood showed traces of variation, however small. It might even have been useful to know whether the atmosphere during the year had been fairly constantly moist.

Some disjointed information may, however, be helpful. In a letter written in 1887 by Col. Jones (who, with Mr. Fox, originated the plumose-divisilobes), he stated that his angulare deorso-pinnatum was raised from decompositum grande, which he found at Torquay, and that other seedlings of this

decompositum, which were delicate and soon died, were quite dwarf and were declared by Moly and Wills to have some indication of pulcherrimum character. Both deorso-pinnatum and decompositum grande were extremely good forms.

Some, at least, of the plumose-divisilobes, from which most of the raised pulcherrimums were derived, were seedlings of Jones's decompositum splendens, which was somewhat inferior to grande. It seems reasonable to suppose that the wild pulcherrimums were seedlings of some such good forms as those that gave rise to the plumose-divisilobes.

The production of complicated forms from so comparatively slight a break from the normal as the decompositum variation is remarkable. Possibly decompositum gives rise also to plumosum, which is more foliose than the normal form and is usually barren and of thin texture, a development, it may be thought, in the direction of pulcherrimum.

As regards the self-propagation of pulcherrimums in the wild, it seems probable that there is none. Here it is perhaps of interest to quote from a paper read by C. T. Druery before the Linnean Society in 1893 (at that time the Stansfields had not produced their pulcherrimums). Druery said—referring to aposporous growth—" the abnormality occurs on wild finds, and has not been induced by culture and, considering the ease with which the prothalli are produced when the pinnae are brought into contact with the soil, and the immense advantage which they must derive from being firmly attached to the frond from the beginning instead of, as in the detached spore, being at the mercy of a thousand and one disturbing factors, it is curious that the specimens found are solitary crowns instead of clumps. This advantage, however, in the struggle for existence is far more than counterbalanced by the absence of scattering spores, which limits the variety strictly to its birthplace."

It should be stated that Druery was dealing with apospory in Athyrium ; but even so, the picture of the fern reproducing itself appears fantastic, and in the case of angulare would not come to the mind of anyone who has seen that fern growing in its headquarters in the south-western counties. But Druery's picture is a reminder that if pulcherrimums produce their peculiar growth for purposes of natural propagation, some such procedure as that depicted would be necessary.

It is well substantiated that prothallic extensions of the fronds of several of our species are encouraged by close culture, warmth as well as moisture. On the other hand,

greenhouse cultivation weakens the constitution of angulares, and it is probable that the pulcherrimum forms would do better outdoors but for the fact that their tender growths are inevitably ruined by a dry atmosphere. Would they flourish in nature in an atmosphere that is always warm and moist? and would their natural progeny by their aposporous methods flourish in such an atmosphere? To an affirmative answer there is the obstacle that the artificial laying down of their fronds has produced unsatisfactory offspring, though here again both parents and offspring are struggling in an atmosphere that is unsuitable. There seems to be a possibility that the pulcherrimum way of life may have been successful in time past when the climate was warm and moist, as it certainly must have been at some stage, in view of the fact that ferns are among the earliest land plants known, and originated millions of years ago. They would hardly have continued to exist had they not been highly adaptable. Can the pulcherrimum variation be a reversion to type attempted in conditions which have been disastrous to it? As bearing on these questions and perhaps adding to the mystery, some words of Dr. Stansfield may be quoted from the *Gazette*, Vol. 1, No. 11, where in writing about the chances of raising something better than depauperate forms from the wild pulcherrimums, he says: "Another possibility which has not yet been fully tested remains in the fact that the degenerate offspring not infrequently bear perfect spores which may give rise to atavistic offspring, i.e., to ferns which may hark back to the grand-parental pulcherrimum character. This experiment has already been made without success, but upon a small and indecisive scale."

It is as if the pathetic little weakling, in a dying effort, is attempting to revert to the sporal method of propagation from which its forerunners so wantonly departed. It would be very interesting to know what these spores would produce. In justice to the wicked parents, it should be remembered that some of them saw the error of their ways in time and adopted the intermittent character.

It is feared that some of the above conjectures may not be scientifically tenable. Readers who would like to take a glimpse of research which seems to impinge to some extent on this discussion should refer to Miss Andersson-Kottö's paper on apospory in Scolopendrium, Vol. 6, No. 8, and to Dr. Rowlands' account of a lecture by Professor Bower on the evolution of British ferns, Vol. 5, No. 12.

P. GREENFIELD.



Messrs. Grubb's Exhibit in Fern Tent, Southport, **1949**

BRITISH PTERIDOLOGICAL SOCIETY

Secretary's Notes

It is proposed to hold the Annual Meeting this year at Southport, probably on the second day of the Flower Show there, in August. It is not possible to give the details here, but these will be circulated to members at a later date, and it is hoped that many of the northern members will make a special effort to be present. It is hoped that this may be a "bumper" meeting. It has been arranged so that members in the North may have the opportunity of attending, and thus having a voice in the running of the Society.

There is a good stock of back numbers of the *Gazette*, which should be specially interesting to new members. These can be obtained from the Secretary at 6d. per copy for not less than six numbers. Cash should accompany orders.

SOUTHPORT FLOWER SHOW, 1949

The Southport Flower Show Committee claims that theirs is the largest provincial show in the British Isles, a claim which is apparently amply justified. The site has many natural advantages, and it is run by a keen committee and officers, who do everything in their power to make the show a success.

On entering the show, there is a long sloping bank, facing south, topped by a thick belt of trees, forming a splendid shelter from the north.

Full advantage is taken of this by a number of firms who exhibit rock and water gardens, extending for practically the whole length of the bank. The result is as fine a collection of rock gardens as I have seen at any show.

From a Pteridological standpoint the result is, to me, a trifle disappointing inasmuch as few of the exhibitors included more than a very small proportion of ferns. It may possibly be argued that the site is not ideal for ferns, but I certainly think the exhibitors might make more use of some varieties in their planting schemes than they do.

While on the subject of the rock gardens, may I be permitted to make a suggestion. Several of the exhibitors, apparently, leave their exhibits standing from year to year, as far as the construction in concerned, only re-planting them annually.

I am quite aware, from experience, that the cost of re-constructing a rock and water garden of this size every

year is very heavy indeed, notwithstanding the assistance given by the corporation in many ways, including a substantial cash bonus in addition to the various awards, free sand and soil, and many other ways, but the above arrangement somewhat cramps the style.

For the members of the Pteridological Society, obviously, the fern exhibits, both trade and amateur, are the most interesting in the show; nor were they disappointed, for I cannot think that any show in the British Isles could get together a better or more representative collection.

Looking at the trade exhibits, those by Messrs. Brookfield, Mr. Reginald Kaye, and Messrs. Grubb are specially worthy of comment, as they were in every way excellent, both as regards grouping, and the quality of the individual plants. Mr. Greenfield dealt with the details of the exhibition more fully in an article in the previous *Gazette*.

I must confess that I was most agreeably surprised both as to the number and quality of the competitive exhibits. Some are illustrated in other pages.

Our President, Mr. Alston, and myself, visited the show on the first day, and attended the official luncheon as the guests of the Flower Show Committee, in common with many of the other specialised horticultural societies.

J. R. Pulham.

OUR FRONTISPIECE

This, and the other two plates, are from photographs selected to be made by our Secretary's choice, which, it is hoped, members will agree could not be bettered; and which certainly does give an excellent idea of the fern beauties shown at Southport last year, and still to be seen and admired by anyone who does appreciate such exhibits.

As a society, we must be grateful to all those who organise this show, which, great as it is, cannot, even so, provide for every kind of plant. A number of show schedules have come of recent years into my hands, and it is a noticeable and regrettable fact that ferns have no place in them. Why this is so, and how to remedy this omission, it is not for me to say, at any rate here; but it does add to our appreciation of the opportunities given at Southport to exhibit and to enjoy a display of this kind, and we can take appropriate action by making a visit in August for this purpose and to meet our



Messrs. Brookfield's Exhibit, Southport, **1949**

fellow-enthusiasts on what has almost come to be looked on as our own ground, at least, so far as the space allotted to ferns is concerned.

Our frontispiece shows the first prize exhibit in Class 14, for three dissimilar hardy British ferns, and includes a magnificent specimen of *Polypodium vulgare Cambricum,* in the centre pan in front.

The other two plates are of the first and second prize exhibits in Class 7, which carries with it the challenge cup, and award which, it may be felt, must have called for the most careful scrutiny by the judges to decide which of these two splendid entries should be considered the superior to the other.

To exhibit is to prove one's ability to grow successfully, whether ferns or cabbages. Long may present exhibitors continue this ability, and stimulate others to become rivals.

E. A. Elliot.

SUBSCRIPTIONS, 1950-51

Our financial year ended on June 30th, and members are reminded that the subscription became due on July 1st, and that it is a real help to our Hon. Treasurer if payment is made promptly.

The balance sheet and statement will be included in our December issue.

In our last issue, No. 10, mention was made of a small plant of *Phyllitis Scolopendrium* taken from the roadside near Tintern, as it seemed to be slightly varietal in appearance. It has now developed more fully and almost normally, but with a definite tendency towards the crispum outline noted long ago by E. J. Lowe and Col. Jones in Hart's tongues collected in that district. This peculiarity appears to be found in roadside plants of this species, and others seen in the woods near Chepstow were nearly always of the flat strap-shaped type.

E. A. Elliot.

BRITISH PTERIDOLOGICAL SOCIETY

List of Members

Honorary Members

CURTIS, CHARLES H., J.P., V.M.H., F.L.S., Editor, *The Gardeners' Chronicle*, 33, John Street, Theobalds Road, London, W.C.1.
HAY, THOMAS, V.M.H., M.V.O., Stoatley Cottage, Bunch Lane, Haslemere, Surrey.
PRESTON, F. G., A.H.R.H.S., Botanic Gardens, Cambridge.
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ALLEN, WALTER S., 144-19, 35th Avenue, Flushing, New York, U.S.A.
ALSTON, A. H. G., B.A., F.L.S., Department of Botany, British Museum (Natural History), Cromwell Road, London, S.W.7.
ASHWOOD, MRS. F. M. W., Newbold-on-Avon, Rugby, Warwickshire.
ASKEW, W. L., Fern Nursery, Grange, Keswick, Cumberland.
ATKINSON, F., Lake Side Cottages, Keswick, Cumberland.

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BOWLES, H. E., C.C., The Larches, Park Close, Rickmansworth, Herts.
BRITISH MUSEUM, THE (NATURAL HISTORY), Cromwell Road, London, S.W.7.
BRITTON, MRS. J. H., M.B.E., Shortwood Lodge, Pucklechurch, Bristol.
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BROOKFIELD, NOEL, Stamford Road, Birkdale, Southport, Lancs.
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CHURCHILL, MRS. A. M., 119, Tilwood Road, Fishponds, Bristol.
CLARKE, T. F., 72/78, Fleet Street, London, E.C.4.
COCHRAN, JOHN, 5½, Nursery Street, Kilmarnock, Ayrshire.
COCHRANE, ANTHONY, Kew House, Duff Avenue, Elgin, Morayshire.
CONSTABLE, W. A., The Lily Gardens, Southborough, Tunbridge Wells, Kent.
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COURTHOPE, THE REV. R. A., M.A., The Rectory, Donhead St. Mary, Shaftesbury, Dorset.
CRANFIELD, LT.-COL. S. W., 47, Old Dover Road, Canterbury, Kent.

Davies, W. T., Gwyndre, Port Dinorwic, Caernarvonshire.
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Dyce, James W., "Hilltop," 46, Sedley Rise, Loughton, Essex.

Elliot, The Rev. E. A., M.A., The Vicarage, South Stoke, Reading, Berks.
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Fisher, C. H., Lower Drabbington, Thornbury, Bromyard, Hereford.
Francis, Charles, Oat Barns, Newchapel Road, Lingfield, Surrey.

Good, Professor R. D'O., M.A., F.L.S., Department of Botany, University College, Hull, Yorkshire.
Gordon, Alfred, The Elms, Ringmer, Lewes, Sussex.
Gourlay, E. S., 124, Nile Street, Nelson, New Zealand.
Grant, James, The Gardens, Troon Welfare Home, 1, Wood Road, Troon, Ayrshire.
Greenfield, Percy, Beech Bank, Stuart Road, Warlingham, Surrey.
Greenfield, H. F., 44, Shepherds Way, Rickmansworth, Herts.
Grotrian, Frederick, Branksome Dene, Westbourne, Bournemouth, Hants.
Grubb, C. W., Brookfield Nursery, Bolton-le-Sands, Carnforth, Lancs.

Hawkins, Frank, 41, Smitham Downs Road, Purley, Surrey.
Hayhurst, Bernard, 91, Windermere Road, Freehold, Lancaster.
Healey, Mrs. J. R., Lily Hill Nursery, Bracknell, Berks.
Hewitt, A. H., 29, Balfour Crescent, Wolverhampton, Staffs.
Holt, T. F. C., Rabys, Newchapel Road, Lingfield, Surrey.

Jackman, G. & Son (Woking Nurseries), Ltd., Woking, Surrey.
Jackson, Fred., Knotts View, Stonethwaite, Borrowdale, Keswick, Cumberland.
Jenkins, Harry, 2, Pier Terrace, Lowestoft, Suffolk.

Kaye, Reginald, Waithman Hardy Plant Nursery, Silverdale, Carnforth, Lancs.
Knox, Sir Alfred, K.C.B., C.M.G., Binfield House, Binfield, Bracknell, Berks.

Lake, R. A., Hertford Constitutional Club, Lombard House, Hertford.
Lankester, C. H., Las Concavas, Castago, Costa Rica, *and* 89, Ditton Road, Surbiton, Surrey.
Lazarus, B. A. M., Lowlands Farm House, Newchapel, Lingfield, Surrey.
Lewis, John Spedan, F.L.S., Longstock House, Stockbridge, Hants.
Long, Mrs. A., Trenoweth, St. Keverne, Telston, Cornwall.

MacFarland, Frank T., Professor of Botany, University of Kentucky, Lexington, 29, Kentucky, U.S.A.
Macself, A. J., 114, Hamilton Road, Reading, Berks
Maling-Wynch, Mrs. V., F.R.H.S., Pine Hill, Camberley, Surrey.
Manton, Professor Irene, B.A., PH.D., Department of Botany, The University, Leeds.
Marsh, Miss S. A., Glenlyon, Holywood, Belfast.
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MONRO, GEORGE, C.B.E., V.M.H., The Red House, Hendon Lane, Church End, Finchley, London, N.3.

NATIONAL MUSEUM OF WALES, Department of Botany, Cardiff.
NEVILLE, GUY, Southminster Hall, Southminster, Essex.

OLIVER, ARTHUR, Tower Road, Darnick, Melrose, Roxburghshire, Scotland.

PENNY, R. S., 10, Vine Street, Greaves, Lancaster.
PERCY, C. P., Inglewood, Kemnal Road, Chislehurst, Kent.
PERRY, AMOS, V.M.H., Heath Lodge, Weeley Heath, Clacton-on-Sea, Essex.
PHILLIPS, HUGH, High Elms, Hitchin, Herts.
PLATTEN, E. W., 11, Barking Road, Needham Market, Ipswich, Suffolk.
PULHAM, J. R. HON. A.I.L.A., 71, Newman Street, London, W.1.

RANDALL, NEVILLE, Haldon Grange, Exeter, Devon.
RANSOM, R. F., Wymondley Bury, Hitchin, Herts.
RIBBONS, BASIL W., B.SC., 28, Boundary Road, Hellesdon, Norwich.
RICHARDSON, J. L., Prospect House, Waterford, Eire.
RICHARDSON, R., 16, Commonside, Ansdell, Lytham St. Annes, Lancs.
RIDGE, DR. R. LESLIE, Carlton House, Enfield, Middx.
ROBERTSON, A., 22, Parkstone Avenue, Hornchurch, Essex.
ROWLAND, ALDERMAN SIR FREDERICK, F.C.A., 56, Moorgate, London, E.C.2.
ROWLANDS, S. P., M.B., B.S., Abbeyville, 44, Beckett Road, Doncaster, Yorkshire.
RUGG, H. G., Dartmouth College Library, Hanover, New Hampshire, U.S.A.
RUTHERFORD, SIR DAVID, J.P., Powis Court, Bushey Heath, Watford, Herts.

SHACKLETON, MRS. C. M., Willows, Bisley, Surrey.
SHERRIN, W. R., A.L.S., South London Botanical Institute, 323, Norwood Road, London, S.E.24.
SMITH, EWART G., 147-151, High Street, Christchurch, New Zealand.
SMITH, MRS. G. A., Pear Tree Cottage, Signal Hayes Road, Walmley, Sutton Coldfield, Birmingham.
STEPHENS, EDWARD J., Rose Lawn, Digswell, Welwyn, Herts.
STERN, COLONEL F. C., M.C., O.B.E., V.M.H., F.L.S., Highdown, Goring-by-Sea, Worthing, Sussex.
SUDELL, RICHARD, F.I.L.A., A.R.H.S., Durford, Sandy Lane, Cobham, Surrey.

TEMPLE, PETER, L.R.I.B.A., M.INST.R.A., 42, Holly Park, Finchley, N.3
TROTTER, R. D., Leith Vale, Ockley, Surrey.
TUCKER, J. W., 23, Feltrim Avenue, Exeter, Devon.

WALKER, MISS D. E., 14, Monks Dene Gardens, Sutton, Surrey.
WATTS, L. H., Starvecrow House, Tonbridge, Kent.
WEISS, PROFESSOR F. E., F.R.S., F.L.S., 73, Longton Avenue, Sydenham, S.E.26.
WHITESIDE, R., 477, Marine Road East, Morecambe, Lancs.
WIPER, ERNEST, 2006, West 48th Avenue, Vancouver, British Columbia, Canada.

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THE BRITISH PTERIDOLOGICAL SOCIETY

THE SOCIETY originated, in September 1891, in the Lake District with headquarters at Kendal. Its members are distributed throughout Great Britain and Ireland, with some in the Dominions and U.S.A. Its objects are :—

(i) The Study of Species and Varieties of British Ferns ; and

(ii) The Recording of Information with regard to Ferns generally.

The organ of the Society is *The British Fern Gazette* published usually twice a year.

The Society is affiliated to the Royal Horticultural Society.

The Annual Meeting is held when possible at some place where ferns are abundant and from which excursions for fern hunting can conveniently be arranged. These excursions are an important feature of the Society's activity.

Fern Fronds can be exhibited by members and to any new fern reaching a high standard the Society will award a Certificate.

Members are invited to communicate with the Hon. Secretary on subjects of interest with regard to British Ferns. Fronds may be sent to him to be identified or named at any time.

A collection of British Ferns is being formed with the help of the Society in the Royal Horticultural Society's Gardens at Wisley.

The Committee is endeavouring to increase the membership of the Society and,, through this and by other means, to encourage the more general cultivation of the varieties of British Ferns. Any lover of horticulture is eligible for membership and the subscription is 10s. per annum (due in advance at or immediately after the Annual Meeting) which entitles members to copies of *The Gazette* and to any help the Officers of the Society may be able to give.

The Hon. Treasurer or Hon. Secretary will be pleased to supply members who may desire it with Bankers' Orders for the convenient payment of subscriptions.

Further particulars may be obtained from the Hon. Secretary,

J. R. PULHAM, Hon. A.I.L.A.,
71, Newman Street,
London, W.1.
Telephones : Museum 0515 ; Edgware 4028

THE ROYAL HORTICULTURAL SOCIETY

FOR nearly 150 years The Royal Horticultural Society has been the leading Society in British Horticulture, and is now the largest in the world. For an annual subscription of two guineas a Fellow is kept in touch with all its operations, has the right to attend all its shows, to visit its gardens at Wisley, and to obtain advice on horticultural matters. Larger subscriptions carry increased privileges. All persons who are interested in horticulture are eligible for membership, and full particulars may be obtained on application to :

THE SECRETARY,
THE ROYAL HORTICULTURAL SOCIETY,
VINCENT SQUARE, LONDON, S.W.1

VOL. VII. No. 12

- The -

British Fern Gazette

December, 1950

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NATIONAL MUSEUM

EDITED BY

Revd. E. A. ELLIOT, M.A.

South Stoke Vicarage,
Near Reading, Berks.

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THE BRITISH PTERIDOLOGICAL SOCIETY

President: A. H. G. Alston, B.A., F.L.S., Dept. of Botany, British Museum (Nat. Hist.), Cromwell Road, London, S.W.7.

Hon. Secretary: Revd. E. A. Elliot, South Stoke Vicarage, near Reading.

Hon. Treasurer: J. W. Dyce, "Hilltop," 46 Sedley Rise, Loughton, Essex.

THE
BRITISH FERN GAZETTE
NEW SERIES

VOL. VII. DECEMBER, 1950. No. 12.

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EDITORIAL.

We are glad to know that the health of our Hon. Secretary has improved, but we regret that this otherwise welcome fact has deprived us of his help. A Secretaryship has been given him which he felt he must accept; and this, with his many other activities of old standing, means that we must lose him.

Mr. Pulham's enthusiasm and energy have been invaluable during his time of office; we are most grateful for this, and hope to retain his interest.

The Editor will continue as Acting Secretary until the next annual meeting, when the matter can be discussed.

We regret, but hope no apology is needed for, the omission of the customary frontispiece, for economy's sake, in accordance with the circular letter sent in September, to which a number of generous responses were made and are here gratefully acknowledged.

DEC 28 1950

A small party, consisting of the President and four other members, enjoyed a visit to the R.H.S. Gardens at Wisley on October 11th, on a perfect autumn day. It was agreed by all that the ferns have been well and thoughtfully planted and are thoroughly cared for: this collection contains some of the best varieties ever raised, of a considerable number of species. Another visit, perhaps rather earlier in the season, may be arranged in 1951.

Members will be notified in this case, and of any other matters of general interest such as the annual meeting, and excursions (if any), but it is intended to issue one number only of the *Gazette* next year, as a further measure of economy: we hope, only a temporary one.

One *Gazette* a year does not, however, mean that the Editor's need of assistance from members, in notes, questions, articles, is any the less. Letters are sometimes received in which there are apologies for being a bother: we can assure our readers that, editorially speaking, we enjoy being bothered, and find it most helpful and refreshing.

The attention of members is called to the Award Certificate given by the Society for new ferns of sufficiently high standard. This certificate is issued for exhibits made at the annual meeting, and it is not necessary for the whole plant to be shown: one good frond is enough, and the Secretary will be glad to arrange for such exhibits in the case of members who cannot personally attend.

New plants have within the last year been seen which have not been so presented, and it is hoped that this important feature of our activities will become prominent again.

The annual meeting is, of course, intended for all members: but it has been suggested that two excursions might be arranged, one to suit Northern members and one for those in the South, at different times, as some members might be able to attend both. Views on this suggestion will be most valuable, and the Secretary would be glad to have them.

At one time, exchanges of ferns were often arranged through the *Gazette,* and we shall be glad to resume this practice, or to help secretarially to put members desiring exchanges in touch with one another.

New members who have joined in the past year are:—

Dr. J. Davidson, West Linton, Peebles-shire.

J. A. Grubb, Esq., Bedford.
N. Robinson, Esq., Fulwood, near Preston, Lancs.
E. A. J. Duffy, Esq., East Croydon, Surrey.

A new volume has been added to the well-known Observer's Pocket Series, compiled by W. J. Stokoe from Pratt's "Ferns of Great Britain," and Step's "Wayside and Woodland Ferns"; two books with excellent illustrations which, with Step's descriptive style and some fresh material, will make this handy little book of much value to beginners and helpful in field work.

The following second-hand books, all in good condition, can be had post-free on application to the Editor:—

	s.	d.
Anne Pratt: "Ferns of Great Britain," second edition	11	6
"Ferns of Derbyshire," edited by Gerard Smith	6	6
"British Ferns," T. Moore	3	6
"The Fern World," Heath, 8th edition	4	6

Moore's book is a small volume, not the octavo two-volume work.

Heath's book, in spite of the title, has to do only with British species, but there are nice plates.

The article, "Selective Culture," is a re-print from the first, pre-*Gazette*, Abstract of Reports, which was issued to members of our Society and covered the years 1894-1895.

THE ANNUAL MEETING.

The forty-seventh Annual Meeting was held on August 24th, 1950, at 3.30 p.m., on the Show ground at Southport. When a request was made to Mr. G. W. Nicholls, the Show Secretary, for some accommodation on the Ground, he most readily acceded to this and himself supervised the arrangements, the day before and the day of the Meeting; on both occasions in heavy rain. Thanks are due to him for the considerable trouble to which he went, and which we believe resulted in a convenient meeting-place for those present. Two of them were also at the Southport meeting in 1936, when nine members attended.

This year there were eleven, as follows: Mr. A. H. G. Alston, M.A., F.L.S., in the chair, Mr. J. Brookfield, Mr. A.

Brunt, Mr. J. Dargue Dixon, Mr. C. W. Grubb, Mr. B. Hayhurst, Mr. R. Kaye, Mr. A. J. Macself, and the Revd. E. A. Elliot; and two visitors who had applied for election, Mr. J. A. Grubb and Mr. N. Robinson.

Messages regretting inability to attend were received from Mrs. Healey, Mrs. Shackleton, Professor Weiss, Mr. J. W. Dyce, Mr. J. R. Pulham, Mr. T. Bolton, Mr. P. Greenfield, Dr. S. P. Rowlands and Mr. R. Whiteside.

The Minutes of the previous Meeting were read, confirmed and signed.

In the absence of the Hon. Secretary, the Editor was appointed Acting Secretary until Mr. Pulham is able to take over again.

Election of Officers.

PRESIDENT—Mr. A. H. G. Alston was unanimously re-elected, on the proposal of Mr. Brunt, seconded by Mr. Dixon.

VICE-PRESIDENTS—On the proposal of the Revd. E. A. Elliot, seconded by Mr. C. W. Grubb, the following were elected, as chosen by the Committee:—

Professor Weiss	Mr. R. Whiteside
Revd. E. A. Elliot	Mr. T. Bolton
Miss I. Manton	Mr. A. J. Macself

EDITOR—Revd. E. A. Elliot.
HON. TREASURER—Mr. J. W. Dyce.
HON. SECRETARY—Mr. J. R. Pulham.
AUDITOR—Mr. P. Temple.

COMMITTTEE—Proposed by Mr. Alston,, seconded by Revd. E. A. Elliot:

Mrs. Healey	Mr. D. Dixon
Mrs. Shackleton	Mr. P. Greenfield
Dr. Rowlands	Mr. C. W. Grubb
Mr. T. Bolton	Mr. B. Hayhurst
Mr. A. Brunt	Mr. R. Kaye
Mr. C. Cordrey	Mr. A. J. Macself

Committee's Annual Report, 1949-50.

The Acting Secretary regretted that it had not been feasible to prepare a Report; but referred to Mr. Alston's re-election as President as a matter for satisfaction to the Society; also Mr. Alston's work on the recent International Botanical Conference on the Continent, and his contacts with possible members in the U.S.A. An expedition had been arranged in the form of a visit to Wisley, on October 11th next.

An Annual Report was received from the Treasurer, as follows:—

Financial Statement, 1949/50.

1949	£	s.	d.		£	s.	d.
30th June:				GAZETTES	42	15	0
To Balance ...	70	2	11	Stationery	3	16	9
Subscriptions ...	22	11	0	Postages	1	19	4
Sale of GAZETTES	3	11	6	Blocks for GAZETTES	5	9	7
				Hire of Room from R.H.S.		11	3
				Subscription R.H.S.	2	2	0
				BALANCE IN HAND...	39	11	6
	£96	5	5		£96	5	5

1950
30th June:
To Balance ... £39 11 6

Treasurer's Report.

I regret I am unable to be present to-day at the Annual Meeting to submit my Statement of the finances of the Society for the past year, and to report on the income and expenditure.

You will note that we started the year with a balance of £70 2s. 11d., and have finished with the greatly reduced one of £39 11s. 6d.—a very unsatisfactory state of affairs, which a glance at my Statement will explain. Subscriptions for the year have amounted to only £22 11s. 0d., only 44 members having paid their dues. This compares badly with the previous year's income from subscriptions, which was £40 1s. 0d., and was itself not too satisfactory. With the last GAZETTE a printed slip regarding unpaid subscriptions was sent to all the defaulting members, and to those who were two years in arrears another more strongly worded note was gummed to the front cover of the GAZETTE. This brought in fewer than half-a-dozen subscriptions. In addition, we have helped our income a little by the receipt of £3 11s. 6d. from the sale of old issues of the GAZETTE.

The main item of expenditure has been the cost of two GAZETTES, £42 15s. 0d., plus £5 9s. 7d. cost of three blocks for the plates. Although this has seriously depleted our funds, it may yet prove to be money well invested, as members may be moved to pay our modest subscription more readily now that they are getting something for their money. With two issues annually we have reverted to our pre-war practice, and if we can improve our financial position sufficiently to keep this up, there should be no reason for dissatisfaction. A look through my books shows that the

cost of the GAZETTE has varied greatly, but a rough average pre-war cost seems to have been about £15. Considering that post-war costs have more than doubled, I think we can regard ourselves as fortunate in being able to get it printed these days for under £25. Sundry expenses have amounted to £8 9s. 4d., a reduction of almost £3 on those for last year.

The state of our finances leads me to bring up the thorny question of an increase in the subscription, to say, 15s., to help offset our dwindling membership and the increased cost of the GAZETTE. I am aware of the many "fors" and "againsts" to this question, and it may be that our wiser course will be to endeavour to strengthen our membership by retaining a small subscription and giving good value for it, so that later on we can safely ask for an increased subscription without fear of losing thereby. The alternative is to reduce the issues of the GAZETTE, publishing one periodically whenever we have sufficient funds in hand for the purpose. Our present balance is ample to cover another issue in December, and I must leave it to the meeting to decide whether it is advisable to husband our slender resources or to incur a further reduction of our funds in the hope that the ultimate gain will more than offet the outlay.

A few subscriptions for the present year 1950/1951 have come in, in addition to those paid by Bankers' Order, which, of course, were credited to our account at the beginning of July. I shall finish my report with the hope that the July GAZETTE, with its extremely interesting contents, may induce our defaulting members to give us their support once more, and enable me to tell a much more cheerful story when next I am called upon to discuss our finances.

J. W. DYCE,
Hon. Treasurer.

The Meeting then considered the draft of a Circular Letter, to be sent to all subscribing members in the British Isles.

It was unanimously agreed, on the proposal of Mr. B. Hayhurst, seconded by Mr. A. Brunt, that various suggestions put forward by the Acting Secretary be adopted. These included making the GAZETTE an annual issue; keeping the subscription at 10s.; searching for a Show in Southern England which will introduce a few Fern classes; more publicity; and the revision of Southport Show Fern classes,

with two or three Open Classes for Cool Greenhouse ferns; and the publication of a book on Fern Culture.

Mr. Brunt proposed, and Mr. Hayhurst seconded, that the Circular Letter be sent out, and this was agreed to.

A Sub-Committee was appointed, consisting of Mr. P. Greenfield, Mr. A. J. Macself, and the Revd. E. A. Elliot, to go into the question of revised Fern classes.

The proposal to change the Society's name, deferred from the 1949 Meeting, was put forward. After a full discussion, the proposal was voted upon and declared carried.

The names of two candidates for election, Mr. J. A. Grubb and Mr. N. Robinson, were before the Meeting, and were declared elected.

[Note.—Mr. Macself and Professor Weiss subsequently withdrew the proposal to change the Society's name, which therefore remains as heretofore.]

SOUTHPORT SHOW, 1950.

By A Competitor.

This year the arrangements were specially planned to mark the twenty-first occasion on which the Show has been held: and so far as the Authorities could control and organize affairs, there can have been little or nothing more that could have been done to make a great and worthy success of the anniversary. Almost at the last minute—in actual fact the day before the opening—the weather took a hand and gave the exhibition of what, we believe, had only happened once before in Show week: a series of violent thunderstorms and torrential rain.

Immense crowds came, none the less, and were well rewarded by so doing: at the Official luncheon on the first day, which our President, Mr. A. J. Macself, and the Editor in Mr. J. R. Pulham's place, were invited to attend, the claim was modestly but justifiably put forward that Southport Show is complementary to Chelsea.

This was particularly true of many exhibits in the Great Marquee, and of the long line outside of Rock and Water Gardens.

Here, our member, Mr. R. Kaye and his firm, won the first prize and the Southport large gold medal, for an outstanding exhibit which came very near to being placed as the best in the show. As a true member of our Society, Mr. Kaye included a number of fine *Polystichums, Scolopendriums, Athyriums,* in variety, and several *Osmunda regalis.* The latter species and others and some varieties were also used on other rock gardens in this section (the non-competitive) and in the Competitive Section as well.

Tent Number 4, in which competitive Ferns were placed, was naturally the next attraction to our members.

This year, for the third time, but not in succession, Mr. C. W. Grubb won the Society's Challenge Cup and the first prize for the big group: his *Athyriums* were particularly fine, amongst them being *Victoriae* and a splendid un-named percristate seedling. Equally good were a number of *Polystichums,* with big *Scolopendriums,* some species, and a nice plant of *Osmunda regalis rotundata.*

The second prize went to Mr. J. Brookfield, who included Jones' *clarissima* amongst many fine *Athyriums*: a number of the best *Polypodium* varieties, some nice *Polystichums* and *Scolopendriums* and three or four *Asplenium Trichomanes incisum.*

In the class for twelve hardy ferns there were two competitors, Mr. Brookfield first, Mr. C. W. Grubb second: the former included Hadwin's and the Oxford *Polypodium Cambricum,* while Mr. Grubb had *A.f.f. plumosum Druery* and *plumosum superbum.* Mr. Brookfield was again first in the class for six hardy ferns, Mr. Grubb second, Mr. C. H. Rainford, of Southport, third: *Polystichums, Athyriums, Polypodiums* and *Scolopendriums* were the fare provided here.

So we came to the classes for three specimens: our member Mr. B. Hayhurst was first for *Scolopendriums,* showing *ramo-marginatums*: Mr. Grubb second, Mr. Brookfield third. In the Polypodies, Mr. Brookfield (first) and Mr. Grubb had huge exhibits, consisting of *Cornubiense* and *Cambricums.*

Mr. Grubb's three *Polystichums* were very large, *angulare plumosum* being especially fine: the Revd. E. A. Elliot's *angulare acutilobum, divisilobum densum* and *aculeatum Bevis* came next, with Mr. Brookfield third. The *Athyriums*

were not particularly noteworthy, but Mr. Brookfield had *Victoriae*: Mr. Grubb came next followed by Mr. Hayhurst, who had a nice crested plant.

Mr. Grubb, Mr. Brookfield and the Revd. E. A. Elliot were the winners for three hardy dissimilar ferns, of which perhaps the most interesting was Mr. Brookfield's *Polypody grandiceps Fox.*

In the last class, one hardy fern, any species or variety, Mr. Hayhurst's *P. angulare divisilobum* was a fine plant, and Mr. Rainford's *P. acul. Bevis* was also good. Mr. Brookfield was third with a *Scol. crispum.*

There were seven entries in this class, no doubt a popular one as it is easy to transport one fern.

Other classes, however, had more than the three prize-winners named and the space allotted to ferns was well filled.

None the less, many more could have been accommodated: and many more competitors are wanted.

As one who had never before exhibited anything, I can now say from an enjoyable experience that even packing ferns for transport is far less difficult than one supposes: and although transport by car is undoubtedly the best, it should not be unduly difficult to take half-a-dozen ferns by rail.

At any rate, why not get a copy of the Show Schedule and see if it does not tempt you to go there yourself and take some of your ferns with you.

THE VEGETATIVE INCREASE OF HARDY BRITISH FERNS.

The usual method of increase (other than by spores) is:

(1) By removing offsets from the central growth when formed and sufficiently developed with roots which form independent plants;

(2) From bulbils, which form usually at the base of the fronds, but in many cases along the rachis which, if laid down in situ under suitable conditions, rapidly root and can be detached as small plants.

(3) From bases (in the plumose sections). By this process large numbers can be raised which as a rule produce the parental form. The main caudex is surrounded by the bases of decayed fronds of previous years' growths, and it is from these bases that increase is effected. The method of treatment is to cleanse and sterilise a wide mouthed bottle and therein place two inches of sterilised silver sand, thoroughly saturated but not flooded with water. The fern bases, having been detached, cleansed, and old roots removed, should be dropped on the sand and the bottle covered with a glass slip or other covering to prevent evaporation and the intrusion of foreign bodies. The bottle should be labelled and placed on a shelf exposed to full light, but not to the sun's rays. In due time, greater or less according to the season, bud growths will be formed on the bases which develop into small plants, rooting into the sand. As soon as they have formed two or three leaves and have developed sufficient root, the young plants can be removed, planted in small pots and kept close, when they will make rapid growth until sufficiently developed to be hardened off and planted out in permanent positions.

By this means *Lastrea montana, Athyrium Filix-femina, Polystichum angulare,* but especially *Phyllitis scolopendrium,* can be increased. In the cases of *L. montana* and *P. Scolopendium,* no difficulty should be experienced, as bases form buds freely. In the case of *A. filix-femina* a portion of the old caudex should be removed with the base, as bud growths are usually produced at the junction of the base with the caudex. In the case of *Polystichum angulare,* some time may elapse before bud growths are formed and many failures may be experienced. The number of bud growths varies considerably, from one to two on *P. angulare,* to 36 on *P. Scolopendrium.* It is desirable to select strong bases as possessing greater vitality. Whilst bud sports are not unknown, the plants raised by the above method are usually true to the parent, being, in fact, part of the original plant.

W.B.C.

BACK NUMBERS OF THE GAZETTE

Spare copies of all the numbers of Volumes VI and VII are available, and can be supplied at 6d. each for a minimum of six numbers, as stated in the previous GAZETTE.

The Editor would value any help Members can give to enable the Society to acquire any number of earlier Volumes.

SOME FERNS IN SWEDEN.

By the President.

The seventh International Botanical Congress was held at Stockholm from July 12th to the 20th, 1950. About 1,400 botanists from all over the world attended; eighty of these were from the British Commonwealth. One of the functions performed by the Congress is to revise the International Rules of Botanical Nomenclature, for which there is a special committee. The section of Nomenclature met every day from July 7th-11th, before the first Plenary Session, which was opened by H.R.H. the Crown Prince (now King) of Sweden. At the last Congress in 1935, botanists were particularly conscious of their isolation and this meeting was very well attended. Of particular interest to Pterdologists were Professor Manton's paper on experimental taxonomy, Professor Copeland's on the use of the prothallus in classification, and Miss Conway's on the spread of bracken.

Papers by Czech and Polish botanists were in the programme, but were not read. However, a party of five Russian botanists, together with an interpreter, arrived rather unexpectedly, and their papers had to be fitted into the programme. Among them, Professor Glushchenko read a paper on "Hybridization of plants by means of grafting," in which he sought to support some of Lysenko's theories. The paper was read in English by the interpreter, a Russian girl of about 25 who was not a botanist, while Prof. Glushchenko sat by her side following in a Russian version. When there was a slide, he explained it in Russian and it was then translated. The official languages were English, French and German, but motions before the Nomenclature Sessions were usually translated by Professor Robyns of Brussels.

Excursions were arranged by the Swedes, both before and after the Congress. One of these, before the Congress, was to the Island of Oland, off the coast, on the Baltic. It is a long, narrow, flat island, with a basis of Ordovician limestone. This is rather dry, and in many places covered by Steppe-like vegetation. Ferns were not numerous, but *Dryopteris Thelypteris* grew unexpectedly in deep limestone fissures. Presumably they were wet at the bottom. On the mainland, *Osmunda regalis* was shown as a great rarity, and Oland is the only Swedish locality for the Ivy. During the Congress there were excursions to the Stockholm Archipelago, where both species of *Woodsia* are common, and the hybrid

between them ; and to Hammarby, where Linnaeus had his country house in delightful surroundings. The members were entertained by H.R.H. the Crown Prince, who is interested in horticulture, at the Royal Palace at Drottningholm. *Mattencia Struthiopteris,* which was also seen near Göteborg, in the South, and in Lapland, was growing in the garden. The Botanic Garden in Stockholm is known as the Hortus Bergianus, but is not so fine as that at Göteborg. The usual hardy ferns were cultivated, including *Woodsias* growing in the flower-beds. There was little grass. The Göteborg garden is comparatively new, but contains a splendid rock-garden classified by Continents. There was an unusually large number of hardy exotic ferns in cultivation, mainly from Japan and North America.

These included *Dryopteris crassirhizoma* from Japan, which is like *D. Borreri* but with a neater habit and narrower fronds, tapering towards the base ; and *Polystichum Braunii,* a Swedish plant. The latter is similar to *P. angulare,* but stiffer, with larger pinnules.

After the Sessions, a special train took a large party to Lapland, where they stayed at Abisko. This is in the extreme north, near the borders of Finland and Norway, and is actually north of Iceland. The country is mountainous and there is a large lake, which is reminiscent of the Lake of Zurich. The mountains have a thin covering of moorland plants, but no heather, and large patches of snow ; in the valleys were Birch woods, but the Pines which cover so much of Sweden had virtually disappeared.

In some wet woods, the Lady Fern, *Dryopteris dilatata,* and *Mattencia,* were very common, but I never saw the Male Fern, Bracken, or Polypody there, though these have been found nearby in Norway.

Cystopteris Dickieana and *Woodsia alpina* were the two ferns of special interest. They grow on limestone cliffs, usually at about 1,800 feet. *Lycopodium complanatum* was not uncommon.

After ten days at Abisko, the botanists returned to Stockholm, and dispersed, after a very successful meeting. The next Congress will be at Paris, in four years' time.

SELECTIVE CULTURE OF BRITISH FERNS.

NOTE.—Written to replace paper on same subject read at meeting, 1894, but lost in Langdale next day.

CHAS. T. DRUERY, F.L.S., F.R.H.S.

Some forty years ago, or about the middle of the present century, the fact that our native species of Ferns were extremely prone in their wild state to sport or vary in a very remarkable way, led to much such a craze respecting them as now obtains with orchids. The result was that considerable collections were made, a number of people devoted themselves to the search for new varieties, and as these, often quite independently of their intrinsic worth as beautiful plants, fetched good prices from the nurserymen who catered for the public taste, their numbers grew ever greater and greater and their names became even more wonderful than the ferns themselves. Simultaneously, of course, the culture of these wild finds was attended by wholesale propagation through their spores, and as it was speedily found that having once varied they were exceedingly apt to vary still more, a fresh crowd of forms was thrown upon the market and fresh dictionaries were required for their respective christenings. It is on record that one nurseryman about that time had a good-sized house full of different new varieties of A.f.f. Frizelliae, one of those extraordinary sports which naturally evoke an extra amount of interest. This, however, being, as is well known, somewhat inconstant in its blood, and as it appears by results, very apt to cross with other forms and transmit its inconstancy to such offspring, yielded very few forms that were worth preserving, and at the present day we only find some five or six, such as the heavily crested Applebyanum, the pretty dwarf ramosum, and one or two others which are deemed worthy of installation among choice things. At that time, however, such imperfect types found a ready sale as curios, and encouraged by this, selective culture with the definite object in view of improving the types was left mainly to a few amateurs, and in time, as the inevitable result of a surfeit of monstrosities, the craze subsided and the lovely British ferns fell not merely into the background of public favour, but actually into such disrepute that the trade with a few exceptions, which can be counted on the fingers, literally knew them no more. Thanks, however, to a small body of amateur enthusiasts, aided by the exceptions in question, the cult of British Ferns did not by any means die, and the choicest selected forms survived and were carefully tended by such

keen judges and ardent admirers as Col. A. M. Jones, Dr. Fox, MM. E. J. Lowe, J. M. Barnes, Moly, Wills, Mapplebeck, Elworthy, Clapham, and others among the small army of amateurs, while three generations of Stanfields, whose last, but by no means least, representative adorns our Presidential chair, lent their aid as finders, raisers and distributors of the best and the best only. It is, however, only of late years that the popular taste has shown a tendency to revive and this tendency has undoubtedly been largely fostered by the several exhibitions which have taken place at Chiswick under the auspices of the Royal Horticultural Society and by Mr. W. H. Birkenhead's displays at the several Temple Shows. These exhibitions have shown to what a really wonderful degree the improvement of type has been carried ; but, nevertheless, in the writer's opinion, in many instances the old bugbear of non-selection shews its ugly features plainly enough to indicate that given the encouragement of popular favour it might some once again to the fore and swamp the thoroughbreds with a crowd of mongrels. In these days the term "mongrel" is appropriate, because we are not merely dependent upon the simple variation, primary as in wild finds, or secondary, as in their still more varied offspring, but the possibilty of combining different varieties by crossing has been so amply demonstrated, by MM. E. J. Lowe, Clapham, Col. Jones and others as to form a systematic and well recognized mode of arriving at new types. This being so, however, it becomes doubly incumbent on the raiser of crossed ferns to select on most rigorous lines, because it is precisely in these, where opposing elements often exist in parental forms which nevertheless affect each other, that ugly semi-combinations arise, which should be ruthlessly consigned to the dust heap in their infancy, a process which would have the double advantage of extinguishing bad forms and enabling the cultural attention to be concentrated on the relatively few good ones. In this connection too, there is the all-important point to be observed of *crossing only thoroughbred types,* since experience has shewn clearly enough that faults are almost certain to be transmitted and often in an exaggerated form. A marked instance of this is seen in the splendid Kew collection of British ferns, in which figure a score or two of polydactylous polystichums of all types. These represent the, at the time, triumphant result of numerous cross sowings by Col. Jones, who, in order to impart the polydactylous character to other forms, sowed a host of varieties with a polydactylous angulare in which the many-fingered crests were irregular, and even normally single pointed pinnae occur, while the tip is some-

times crested and sometimes not. *Every one* of the crossed progeny has precisely the same defects, and in some the forking is anyhow. This, of course, is a great pity, as symmetry should undoubtedly be one of the indispensable points of a really good fern. Symmetry indeed might be the text of this paper for it is the touchstone of the best and where existent renders even depauperate forms beautiful, as witness A.f.f. Girdlestoneii. Symmetry also involves that regularity and evenness of crest such as we see in A.f.f. cristatum Elworthy, percristatum Cousens, A.f.f. Victoriae and so on, as well as in some of the Lastreas, the old cristata to wit, Dadds' and Wills' polydactylas, Barnes' L. montana cristata and the Azores L. dilatata cristata foliosa. We have indeed a host of fine things in the crested section while on the other hand, a number of beautiful plumose forms are by no means so barren as is usually supposed and I have a very strong conviction that all of them would be found to bear spores now and then if watched narrowly enough. Mr. Bolton for instance, has shown me P. ang. Pateyii with tiny but perfect sori and spores. On Col. Jones's wonderful densum I found single spore cases with a strong lens, and have actually raised three fine plants from them. Barnes A.f.f. plumosum has I believe the reputation of being quite barren, but I had a division which one year was absolutely crowded with spores. Now it is precisely these high class plumose forms which should be allied with the high class crested ones if possible. Take Kalothrix as a type; it may be argued that cresting would spoil it, but I do not think we are justified in predicting that, when nature so often surprises us with unexpected results. I have had one try in this direction, sowing kalothrix with percristatum Cousens the most symmetrical cristate athyrium I know of. The result was satisfactory but peculiar. Kalothrix has one fault, that of throwing back partially to its plumose progenitor, of which it moreover always yields a percentage when sown. The result of crossing was a complete throw back, and I got two plants of plumose Cousensii shewing unmistakably the falcate pinnae of kalothrix plumosum, percristate like Cousensii, and with the creping rootstock of Kalothrix instead of the shuttlecock of Cousensii, but not a trace of the true Kalothrix cutting. Hence I am inclined to think the slightly fugitive character of Kalothrix is likely to be fatal to any thorough cross. Curiously enough I sowed from one of these crosses, and got a host of nearly normal Athyria; and another sowing yielded all grades. My paper is, however, swelling to too great a length and I will therefore

summarise my conclusions as briefly as possible, and then finish up with a practical example of what I am preaching.

These conclusions are

1. Sow only from thoroughly symmetrical forms.

2. Destroy ruthlessly defective progeny and only bring on the best.

3. When crossing, do so with some definite object, and only use perfect types.

The "massacre of the innocents," under No. 2, is one of the hardest rules to obey, but it is really necessary when we consider the immense abundance of the crop resulting from a successful sowing. Every fern lover will know of gardens filled with rubbish, due to the habits of planting out seedlings without selection "to see what they will do." What they do is to grow rampant and monopolize the whole place, for it is much more painful to dig up and destroy an adult than to extinguish it in its "innocent" stage, à la Herod.

As a striking result of selective culture on what I consider to be the right lines, I may be pardoned for pointing to the superbum strain of plumose Athyria raised by me, the two best of which are now in the possession of the Queen at Windsor Castle. Little did the original finder of the Axminster plumosum 35 years ago imagine what possibilities of development were existent in his "find." This plant, finely plumose as it is, bears not only a fair crop of spores, but intermingled with these are numerous bulbils, which with special care will yield plants. Years elapsed before any decided sports were obtained from sowings, though seedlings, fairly true to type, pervaded every collection in the country. In time, however, Mr. Parsons' keen eye noted the finer cutting of his plumosum elegans. This, fertile and bulbiferous, like the parents, also long remained unique, until a pinna was sent to me to shew the bulbils accompanying the spores. With permission I sowed from this pinna, and Mr. Fitt did so simultaneously from the plant which yielded it. Now, marvellous to relate, both our sowings yielded crops of almost all heavily crested plumosums, very foliose, very similar in type, and in all but two exceptions with defective pinnae ; i.e., with blanks or depauperate pinnules. In my batch of over a hundred plants only two were uncrested, and these were true plumosum elegans, but fortunately among the rest was the perfect crested superbum, upon which at once I concentrated my attention. The second year I found a few spores, and from these I raised about 120 plants of two distinct sections, viz.,

crested of all grades, from furcate to heavy grandiceps, and a grand batch of quite uncrested plumosums. Of all these, there were no two plants alike, and only one which could be called superbum, in the sense of being a true seedling, but even this was an improvement. Strange to say, however, in each class there was one plant far away ahead of all the rest ; the crested one was superbum percristatum, in which even the pinnulets are fanned, and the plain one was plumosum Druery, of which I have exhibited pinnae, and which, while perfect in every respect, is absolutely quinquepinnate, or five times divided. A singular feature of this plant is its almost evergreen character, since while Axminster dies down in October, and superbum in November, I have had plumosum Druery in the same house quite green at Christmas. In addition, it rises several weeks earlier than its progenitors, thus adding quite two months to its value as a decorative plant. This produces spores and bulbils freely, but I have only succeeded in pulling one bulbil through the winter, and making a plant, which is quite true as might be expected. Now of all this batch I have only tried to propagate three of the very best, among them a very fine improved Axminster named dissectum. This, strange to say, gives quite true offspring. The best of the cristatums, percristatum Druery, has so far been barren, while from plumosum Druery I have a few very promising seedlings, too young as yet to pronounce upon. The only parallel to this splendid break was the marvellous plumose polystichums, raised by Col. Jones and Dr. Fox, another case of selective culture on the lines of perfect symmetry and choice of the absolute best.

Chas. T. Druery, F.L.S., F.R.H.S.

AN ELDERLY FERN MANUAL.

By a Member.

In past numbers of the *Gazette,* some venerable books on ferns have been described: here is an extract from one that cannot be called more than elderly, having been published in 1889 or 1890, and was added to my collection not long ago as coming well within the limits which I usually impose ; that is, publication before 1900, and cost now 5s. or under.

Correvon's book on Alpine plants, about 1885, appears every now and then in second-hand lists: less often so, his "Hardy Ferns," a paper covered work of some 240 pages,

in which chapter nine is headed, "Ferns in the horticultural world."

Writing in French in Geneva, he looks rather enviously westwards, and says:

"In the territory of ferns, we have already admitted that the English are our masters. It is an undeniable fact that they reign as sovereigns in the world of ferneries ; no one will dispute this who knows their cultivation and their gardening or botanical literature.

"The English climate lends itself better than any other to these cultivations: the dampness of the air, which reduces the harmful effects of the sun's rays, and a comparative evenness of temperature, exercise considerable influence on the country's vegetation on the whole and endow it with a great display of cryptogamic flora.

"This explains the abundance of species and forms of ferns in Great Britain and also, in part, the favour with which the English public welcomes every publication relating to this branch of botany.

"The literature of fern cultivation and of their study is larger in the United Kingdom alone than in all the rest of the world, and it is quite certain that anyone who wishes to study ferns seriously must, as a start, learn English."

M. Correvon then described some fern nurseries, beginning with Messrs. Birkenhead's at Sale, near Manchester, which, large though it was, had only been started some twenty years before (about 1870). Its growth was a proof of the energy of the founders, and of the support of the English public.

The catalogue, published at intervals, had 130 pages and 131 illustrations: 1,400 species and varieties were grown, and the collection must be considered to rank next in importance to Kew and Dublin. At Sale, too, Messrs. Stansfield had a nursery, chiefly consisting of British ferns ; their catalogue contained the largest selection of varieties. For example, there were 95 of *Scolopendriums,* 136 of *Aspidium* (*Polystichum, Ed.) angulare,* 28 *Polypodies* and 94 *Athyriums.*

In London, Veitch, Bull and Henderson all flourished in the fern trade and, looking through their catalogues, it was

something of a mystery to know how they managed to sell all that was grown.

Botanic gardens and nurseries in France, Switzerland, Germany and Belgium are named, and there is an account of a Swiss botanic garden in the Pennine Alps, then in process of formation on the lines of W. Robinson's "Wild Garden." This would be managed by an International Committee, and was to be called "Linnaea."

It would be interesting to know how many of these nurseries and gardens still exist, and how those which do so have fared in the last forty years.

RANDOM NOTES.

The last issue of the *Gazette* had so much about *Polystichums* that a further reference may seem unwarranted: it will be my last for a time. Three specimens of *aculeatum* have been under observation. One was fairly typical *lobatum* when received from Dorset; this was sent by Mr. P. Greenfield. It is now equally fairly typical *aculeatum* throughout, one crown.

The second was sent me as *P. Lonchitis,* and has a good crown of typical *aculeatum* fronds, with very upright growth. An offset has had two small fronds each year, quite definitely *cambricum,* the *lonchitidoides* of most authors. Both these specimens have rather narrow fronds, yellowish-green.

The third specimen is in four parts. A large old plant which I have had for 27 years from South Devon, was chopped up early this year and gave two large crowns, and one smaller, all with somewhat narrow and drooping fronds, typical *aculeatum*. There was also an offset, which to my surprise has several fronds, all of them pure *cambricum* in type: this is something of a puzzle, although I am more convinced than ever that the *cambricum* and *lobatum* fronds are stages in the growth of at least some *aculeatums,* if not all: and the only explanation I have to suggest for the offsets' behaviour is that the *cambricum* stage remains persistent "in the blood," and more or less evident as a permanent feature.

In my part of the country there are few ferns, one of them being Bracken, and even that does not grow nearby, though there is a self-sown plant in my backyard wall and

sporelings crop up consistently in many of my spore pots. Fronds collected here and there as opportunity served, drew my attention when closely examined, by a sort of dentation, or teeth in plain English, on some pinnules. Turning to my stand-by, T. Moore's octavo volumes, it appeared that a distinction which he was inclined to follow had been made between fronds so marked, and those with smooth-edged pinnules.

As soon as further chances allowed, more fronds were gathered and at once examined. My conclusion is that there is really no such distinction, as fronds from the same plant have, often, some plain and some toothed pinnules.

One distinction between *Dryopteris (Lastrea) filix-mas and D. (L.) Borreri (paleacea, pseudo-mas)* is in the shape of the pinnules. In the former, these have rounded and more or less incised tips ; in the latter, the tips are square and look as if they had been cut across by scissors.

Many years ago, Dr. F. W. Stansfield showed me another distinction, as reliable or more so, in the sori.

Those of *filix-mas* extend to nearly the pinnule tip: on a well-grown old plant there may be 9, 10, or 11, in two rows. *Borreri* has fewer, 6 or 7, extending to about half-way up the pinnule from its base.

A variety of the latter in my collection has two sori only, at the base of each pinnule.

In Moore's "Nature Printed Ferns," Vol. 1, plate 33, figure A, is named Paleacea and B is incisa. This appears to be a mistake: A should be incisa and B Paleacea.

This year a sowing of *Lastrea dilatata lepidota cristata,* which may be the only existing specimen of this fern, has resulted in several promising youngsters ; as yet too young to say much about, but to be watched with interest for development, and perhaps to reveal the parentage of this variety.

My guess is *L. dilata lepidota* × *L. dilata cristata.*

E. A. Elliot.

AN EXCHANGE SCHEME.

The University College Botany Department at Hull has started, under the direction of Professor Good, one of our members, a list of ferns for exchange.

Those who wish to avail themselves of this offer should make enquiries from Miss J. Frodin, Department of Botany, University College, Hull, Yorkshire.

The list at present is as follows:—

Asplenium nidus-avis.
,, *Septentrionale.*
Aspidium molle.
A.f.f. var. *corymbiferum.*
Blechnum Braziliense.
Ceterach officinale.
Cheilanthes farinosa.
,, *hirta-Ellisiana.*
Cyrtomium caryotideum.
Cystopteris bulbifera.
Davallia bullata.
,, *pyxidata.*
Dryopteris spinulosa.
,, *immersa.*
,, *extensa.*
Gymnogramme chrysophylla.
,, var. *Massonii.*
,, *Peruviana argyrophylla.*
Lygodium scandens.
Nephrolepis hirsutula.
Nothoclaena sinuata.
Pellaea flexuosa.
,, *hastata.*
Polypodium calcareum.
,, *aureum.*
,, *sub-auriculatum.*
Polystichum Lonchitis.
Pteris cretica.
,, var. *albo-lineata.*
Pteris Victoriae.
,, *incisa.*
,, *longifolia.*
,, *flabellata.*
,, *leptophylla.*

and the following *Adiantums*:—

caudatum.
concinnum.
,, *latum.*
cuneatum deflexum.
,, *grandiceps.*
chilense.
capillus-Veneris.
,, ,, var. *Mariesii.*
decorum magnificum.
gracillimum.
Fergusoni.
,, *rubrum.*
fulvum.
hispidulum.
Lambertianum.
mundulum.
pubescens.
tenerum.
tinctum.
scutum roseum.

Members applying should state what they are able to offer in exchange: although most of the above ferns are foreign, British ferns are acceptable as exchanges. We understand that the Department hopes in time to extend their list.

Another exchange scheme has been suggested by our member, Mr. F. G. Maunder, St. Peter's Road, Bury, Lancs. This plan is intended to help the Society's finances. Mr. Maunder wishes to get in touch with other members who have surplus varieties for disposal, and to pay an agreed price for them, but to the Society and not the "seller." It is an idea that might be extended; but any members interested will please write direct to Mr. Maunder, for the present, and not to the Secretary.

FERNS IN THE ISLE OF WIGHT.

A ten days' visit to any locality, in which there is any quantity of ferns, is quite insufficient to cover all the ground; but when, as was possible during my stay there in July, most of nearly every day can be given up to expeditions, a very fair idea of the flora can be had.

This was very considerably helped by previous correspondence with Mr. P. Greenfield, who knows the island well, and the spots where the most interesting plants grow: thanks to him, no time was wasted looking over places where nothing would have been found.

Old records say that the Royal Fern, *Osmunda, Lastrea Thelypteris, Ceterach,* the two seaside spleenworts, *marinum* and *lanceolatum,* and Moonwort and Adder's tongue, are amongst the island's ferns.

Of these, the first three are probably now extinct there: the last two are very local, and one, Adder's tongue, is very doubtful.

Asplenium marinum and *lanceolatum* may still survive, but there was no opportunity to search for these. Twelve species were seen: two Lastreas, two Polystichums, three Spleenworts, common Polypody, Athyrium, Blechnum, Scolopendrium and Bracken. Nothing at all varietal was found, but all the four species most prolific in variation are there.

A considerable number of interesting flowering plants occur, and many of these were discovered: I was also lucky in seeing Peregrine Falcons and Ravens, and believe many fine species of Butterflies can be found.

Bus services in all directions are good and helpful, even when one aims, as I most enjoyably did, at walking.

E. A. Elliot.

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THE BRITISH PTERIDOLOGICAL SOCIETY

THE SOCIETY originated in September 1891, in the Lake District with headquarters at Kendal. Its members are distributed throughout Great Britain and Ireland, with some in the Dominions and U.S.A. Its objects are :—

(i) The Study of Species and Varieties of British Ferns ; and

(ii) The Recording of Information with regard to Ferns generally.

The organ of the Society is *The British Fern Gazette* published usually twice a year.

The Society is affiliated to the Royal Horticultural Society.

The Annual Meeting is held when possible at some place where ferns are abundant and from which excursions for fern hunting can conveniently be arranged. These excursions are an important feature of the Society's activity.

Fern Fronds can be exhibited by members and to any new fern reaching a high standard the Society will award a Certificate.

Members are invited to communicate with the Hon. Secretary on subjects of interest with regard to British Ferns. Fronds may be sent to him to be identified or named at any time.

A collection of British Ferns is being formed with the help of the Society in the Royal Horticultural Society's Gardens at Wisley.

The Committee is endeavouring to increase the membership of the Society and,, through this and by other means, to encourage the more general cultivation of the varieties of British Ferns. Any lover of horticulture is eligible for membership and the subscription is 10s. per annum (due in advance at or immediately after the Annual Meeting) which entitles members to copies of *The Gazette* and to any help the Officers of the Society may be able to give.

The Hon. Treasurer or Hon. Secretary will be pleased to supply members who may desire it with Bankers' Orders for the convenient payment of subscriptions.

Further particulars may be obtained from the Hon. Secretary,

~~J. R. PULHAM, Hon. A.I.L.A.,~~
~~71, Newman Street,~~
~~London, W.1.~~
~~Telephones : Museum 0515 ; Edgware 4028.~~

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